REPORT RESUMES

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A STUDY OF COMMUNITY COLLEGE POSSIBILITIES IN PIMA COUNTY, ARIZONA.

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THE POPULATION GROWTH (1950-60) OF PIMA COUNTY HAS BEEN GREAT, AND TUCSON HAS LED THE NATION WITH A 36.8 PERCENT INCREASE. SERVICE INDUSTRIES, THE GOVERNMENT, AND MINING PROVIDE THE MAJORITY OF JOBS. THE UNIVERSITY OF ARIZONA AND 16 PRIVATE VOCATIONAL SCHOOLS ARE LOCATED IN TUCSON. RESULTS OF A SURVEY OF BUSINESSES IN THE AREA INDICATE THAT 65 PERCENT OF THE JOB CLASSIFICATIONS COULD BENEFIT FROM EDUCATION BEYOND HIGH SCHOOL BUT NOT NECESSARILY A COLLEGE DEGREE. NINETY-TWO PERCENT OF HIGH SCHOOL SENIORS INDICATE THAT THEY INTEND TO HAVE SOME EDUCATION BEYOND HIGH SCHOOL, 61 PERCENT PLAN TO ATTEND THE UNIVERSITY OF ARIZONA, 9 PERCENT ARIZONA JUNIOR COLLEGES, 9 PERCENT OTHER INSTITUTIONS WITHIN THE STATE, AND THE REST INTEND TO GO OUT OF STATE. COUNSELING WOULD BE A MAJOR PART OF THE PROGRAM AS 62 PERCENT OF THE SENIORS FELT THEIR HIGH SCHOOL GAVE THEM LITTLE OR NO VOCATIONAL HELP. BY 1970, THE COLLEGE EXPECTS MORE THAN 3,000 STUDENTS AND IN EXCESS OF 5,000 BY 1975. ANOTHER FACTOR PRESENTED TO RECOMMEND THE BUILDING OF A JUNIOR COLLEGE IN THIS AREA IS THAT PIMA COUNTY PAYS MORE OUT-OF-STATE TUITION TO EXISTING COMMUNITY COLLEGES THAN ANY OTHER COUNTY. (HS)

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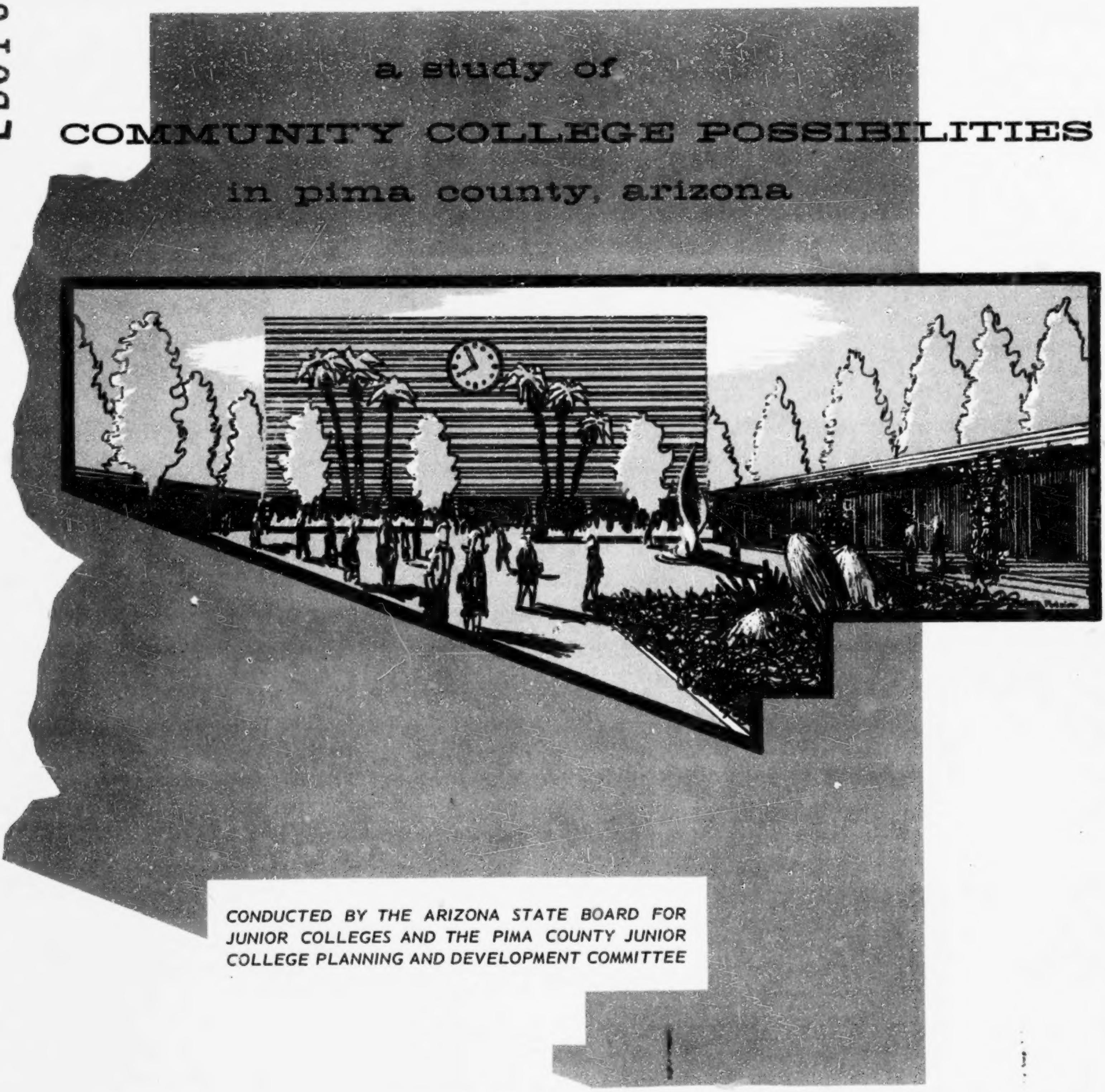
a study of
COMMUNITY COLLEGE POSSIBILITIES
in pima county, arizona



CONDUCTED BY THE ARIZONA STATE BOARD FOR JUNIOR COLLEGES AND THE PIMA COUNTY JUNIOR COLLEGE PLANNING AND DEVELOPMENT COMMITTEE

UNIVERSITY OF CALIF.
LOS ANGELES

SEP 29 1966

CLEARINGHOUSE FOR
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INFORMATION

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JC 660 014

A STUDY OF
COMMUNITY COLLEGE POSSIBILITIES
IN PIMA COUNTY, ARIZONA

Conducted by

The Arizona State Board for Junior Colleges
and
The Pima County Junior College
Planning and Development Committee

June, 1966

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Neal Justin	None
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Richard H. Snider
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Consultant

Raymond J. Young
Survey Director

FOREWORD

The Pima County Junior College Planning and Development Committee, with assistance from the Arizona State Board for Junior Colleges, initiated a comprehensive citizens' participatory survey to determine the feasibility of community junior college establishment in Pima County. The survey, utilizing an objective, scientific approach, sought to discover if conditions warranted the establishment of such an institution in Pima County. In addition, the several studies included in the survey are designed to provide guidelines for a long time to curriculum development. Thousands of Pima County residents, both youth and adults, have been involved in one way or another by the processes utilized in data gathering.

Purposes of the feasibility survey were to obtain essential facts pertaining to (1) enrollment prospects, (2) educational needs of youth and adults, (3) educational needs of industry, business, and government agencies, (4) availability of adequate sites for locating the college, (5) adequacy of financial resources and requirements, (6) community characteristics, attitude, interest, and willingness to support an educational program for technical and semi-professional level occupational programs, pre-professional curricula, general and liberal education necessary to complement well-rounded two-year educational programs.

This report represents the combined efforts of many community agencies and organizations and of both lay and professional groups. Members of the formally organized Citizens Survey Committee deserve much credit for their conscientious efforts and many long hours of work in pursuing this study to its successful conclusion.

This study provides a sound basis for future educational planning in Pima County. Those persons responsible are to be commended for having followed a procedure which authorities in the junior college field of education advocate, and some state authorities require, prior to establishment.

A community junior college in Pima County will enable the County to join the roster of various others having one or more four year colleges or universities which already have a public junior college. No effort should be spared by responsible officials in seeking to provide rewarding, high quality, and appropriate types of educational opportunities for which this study reveals great need. It is the soundest investment which any American community can make.

Raymond J. Young
Survey Director

ACKNOWLEDGMENT

In acknowledging the efforts of the many organizations and individuals who assisted in making this study possible, citizens of Pima County may all be filled with a sense of pride and gratitude. Pride can be taken in the wholehearted manner in which the entire populace of Pima County responded. Many groups and individuals contributed much time, effort, and financial aid to pursue the study portion of the planning and development program to a successful conclusion. Rarely was a request for help refused, and the quality of effort was outstanding. Residents of Pima County owe a debt of eternal gratitude to all groups and individuals who functioned so well in behalf of the study project.

It is important that the efforts of a number of groups and individuals be singled out for particular mention in light of their significant contributions. First, the vision and leadership of the Tucson Youth Board, the Tucson Community Council, and the Tucson Chamber of Commerce is acknowledged for initiating the overall plan. They provided invaluable help in the form of services by their professional and clerical employees, use of supplies and equipment, office space for study personnel, and space for meetings of committees. Second, gratitude is expressed to members of the Arizona State Board for Junior Colleges for their provision of funds which helped defray the cost of the survey, and for assistance in securing the services of a qualified professional staff. The State Board's executive director, Mr. Marvin Knudson, was at all times most helpful and encouraging.

The general design, direction, and plan for this survey, the data gathering instruments and procedures used in the study of high school seniors and graduates, parents, and industrial firms, were provided by Dr. Raymond J. Young, Professor of Higher Education and Director, Community and Junior College Administrative Institute, the University of Michigan, Ann Arbor, Michigan. Processing of data was directed by him. In addition, he wrote Chapters II, IV, VIII, and the section on enrollments in Chapter VII. Editorial work on the final report was exercised by him.

Working with him as Field Director was Mr. Richard H. Snider, advanced graduate student at the University of Arizona, who maintained the headquarters office on a half-time basis, and coordinated the work of the several subcommittees, providing them with information and assisting them in collecting data. He acted as special advisor to the Sub-Committee on the Educational Needs of Youth, aiding them in their collection of data for Chapters II, III, and IV.

In addition to managing the production of the survey, he wrote Chapter III, and edited Chapters I, VI, and VII, whose preliminary drafts were written by various members of the sub-committees involved. He also supervised certain important phases of data processing.

Dr. Jerome E. Leavitt of Portland State College, Portland, Oregon, and of Tucson, Arizona, acted as consultant to the Sub-Committee on the Needs of Business, Industry, and Government, and prepared the preliminary draft of Chapter V. Acknowledgment for coordinating secretarial services is made to Mrs. June Pollen.

Assistance is acknowledged from the Pima County Board of Supervisors who made available their top level planning and financial personnel to work on the study and permitted the use of many of their reports and materials. Likewise, gratitude is expressed to the City of Tucson for the contribution of certain supervisory personnel in the Planning Department, Police Department, Fire Department, and Personnel Department to work with the committees. The Arizona Employment Service was most generous in the use of its staff and in the materials made available to the study committees.

For their cooperation and assistance in facilitating the distribution, collection, and administration of questionnaires for gathering important data, gratitude and appreciation are expressed to officials of all public school systems and private schools in Pima County, and to PTA.

The University of Arizona was most helpful throughout the study. Some of its personnel assisted in the early organizational stages, and their guidance in numerous study procedures was made available to our directors.

Too many accolades cannot be heaped on the hundreds of public spirited citizens who constituted the numerous committees and who assisted committees in carrying out their duties. The high level of effort put forth by key personnel in the study sub-committees is very evident in the quality of the following report. They worked well and expertly with the professional staff in all areas.

Members of the business, professional, industrial, and governmental community were most co-operative in responding to questionnaires and in the promptness with which they completed them. Suggestions and information from them were most helpful.

The conduct and preparation of this study was a true example of the kind of team work and generosity that was exhibited throughout. It was greatly enhanced by generous contributions of many establishments, including Tucson Office Supply, Tucson Education Association, the University of Arizona Mimeograph Bureau, Southern Arizona Bank, Valley National Bank, and the Arizona Training Center for the Handicapped.

As the first important milestone is achieved in the planning and development process, a sincere "thank you" is expressed to all who helped. Now, we look ahead enthusiastically and optimistically to the task of helping the public become informed about the contents of the study of securing public approval for the formation of a junior college district, and of subsequently establishing a junior college in Pima County.

Jacob C. Fruchthendler, Chairman
Pima County Junior College
Planning and Development Committee

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CHAPTER I

THE GROWTH AND DEVELOPMENT OF PIMA COUNTY

Historical Background of Tucson and Pima County to 1940

The year was 1776. In the east, along the seacoast, the American Revolutionary War was being fought; in the west, in the valley of the Santa Cruz River, a garrison of Spanish soldiers was established at San Jose del Tucson to protect the missions. Thus was founded the city of Tucson, named from the Indian word "Stjukshon" - meaning "dark spring at the foot of a hill."

The earliest known inhabitants of the area, now known as Pima County, were the Pima and Papago Indians. Their occupation dates back to at least the tenth century A.D. The first European to come among them was the Jesuit missionary Father Eusebio Francisco Kino, in 1692. He established missions along the Santa Cruz Valley with San Xavier del Bac in 1700 as the northern-most of these.

Little attention was paid to the development of Tucson as the Spanish domination of Mexico neared its close. During the years of Mexican rule, 1822 to 1846, the town languished. In 1846, Lt. Col. Phillip St. George Cooke, commander of the Mormon Battalion, raised the first American flag over Tucson. The Mexicans repossessed the town only to lose it permanently in 1854 when the Gadsden Purchase made this area part of the United States of America. At that time, Tucson was part of the Territory of New Mexico with the capital at Santa Fe and the county seat at Mesilla.

At the date of this purchase, the gold rush in California was causing the influx of many pioneers in search of gold and other valuable ores. In 1860, the great Cerro Colorado Mine, about forty miles southwest of Tucson, hauled $100,000 worth of silver. Except for the Civil War years, prospecting and mining activities showed phenomenal growth. When the silver deposits were exhausted, copper was mined in increasing quantities, and by 1888 became the most important ore mined. Ajo, whose mines really began to export valuable copper in 1855, was still another important community contributing to the wealth and population of Pima County.

Meanwhile, the first wave of Anglo-American settlers had come into Southern Arizona several years before the Civil War. The beginning of the war found the majority of Tucson residents in sympathy with the Confederacy. In 1862, Confederate President Jefferson Davis proclaimed the territory of Arizona to be the area of the Territory of New Mexico south of Parallel 34, with Mesilla as the capital. The Confederates from Texas marched unopposed into Tucson in 1862 but were routed three months later by the California Volunteers in an action that took place near Picacho Peak, the only Civil War battle in Arizona.

The Civil War struggle had temporarily slowed down the rate of settlement, but had by no means stopped it. After the fighting was over, and in spite of continued Indian disturbances, the second and greater wave of American settlers got underway and was maintained well into the twentieth century. Before 1900, a majority of the towns and cities of Arizona had been established and the Anglo-American population had come to out-number the Hispanic Americans living in the territory. On February 24, 1863, the United States Congress created a separate Territory of Arizona.

Pima County was a creation of the first territorial legislature which assembled in Prescott from September 26th to November 10th, 1864. The boundaries were simple -- all the land east of Meridian 113° 20' and south of the Gila River. In intervals between 1871 to 1891, the area of Pima County was cut to provide for three additional counties: Maricopa, Pinal, and Santa Cruz.

The state capital, first established at Prescott in 1864, was moved to Tucson in 1867 and back to Prescott in 1877 before it was finally located at Phoenix in 1889. By 1871 Tucson claimed 3,224 inhabitants and boasted, among other symbols of civilization, a newspaper, a brewery, a fair hotel, two doctors, a number of saloons, and one bath tub. In this same year, the first school in Tucson was established by John Spring. The first banking institution in Tucson was founded in the year 1879 under the name of the Pima County Bank. In 1881 the Southern Pacific Railroad came into Tucson; it was somewhat of a compensation for the loss of the territorial capital. Further solace was found in 1885, when the legislature awarded the location of the territorial university to the Old Pueblo. By 1887, Tucson was not only the largest city in Arizona, and a county seat, but it had also become a small economic center for the business operations of the southern half of the state. In 1900, Tucson was still the largest city in the territory with a population of 7,531, and it retained that rank until 1920 when Phoenix reported a population of 29,053 compared to Tucson's 20,295. After years of petitioning by Arizona residents, President Taft signed the bill making Arizona the 48th State in the Union on February 14, 1912.

The state grew steadily until the years of the depression. Arizona population was estimated to have fallen off by at least 50,000 for the period between 1932 and 1936. A considerable portion of the exodus probably resulted from unemployment in the mining districts. Copper, the chief index metal of Arizona mining industry, was dealt a hard blow when its national consumption decreased one-fourth in 1929-1930. The mining industry prior to the Second World War was still the most important industry in Pima County, although agriculture had started a steady climb upwards with the coming of modern techniques in irrigation. A widespread awareness of the climate in this area also was starting to produce a tourist trade.

After statehood, the city of Tucson had grown in population, with an increase of more than 12,200 people from 1920 to 1930 (see Table 1). However, during the depression decade

TABLE 1

POPULATION GROWTH OF PIMA COUNTY
AND THE CITY OF TUCSON
1870 to 1940

Year	City of Tucson	Tucson Urban Area	Pima County
1870*	3,224		5,716
1880*	7,007		17,006
1890*	5,150		12,673
1900*	7,531		14,689
1910*	13,191		22,818
1920*	20,292		34,680
1930	32,506	42,971	55,676
1931	32,775	44,000	57,000
1932	33,050	45,500	59,000
1933	33,300	47,000	60,000
1934	33,575	48,000	62,000
1935	33,800	50,000	63,000
1936	34,000	52,000	65,000
1937	34,400	53,000	67,000
1938	34,800	55,000	68,000
1939	35,200	56,000	71,000
1940	35,752	58,072	72,838

Source: *Decennial Census Data -- U. S. Bureau of the Census; Single Years -- City-County Planning Department.

of 1930-1940, the rate of increase fell off considerably, revealing an increase of only 3,200 people. Nevertheless, in every decade from 1900 to 1940 the rate of increase of Arizona's population was from two to four times greater than the rate of increase of the population of the entire United States, and in 1930 and the depression decade ending in 1940, Pima County's rate of increase was double that of Arizona's and four times that of the nation (see Table 2). Despite this rapid growth, Pima County in 1940 had a population density of less than eight persons per square mile, compared to a national average of 44.2 persons per square mile (see Table 3).

TABLE 2

UNITED STATES, ARIZONA, PIMA COUNTY, AND
THE TUCSON URBAN AREA FROM
1900 TO 1940

Area	1900	1910	1920	1930	1940
U. S. (in Millions)	76.1	92.4	106.5	132.2	132.1
% Increase	20.7%	21.0%	14.9%	16.1%	7.2%
*Arizona	122,931	204,354	334,162	455,373	499,261
% Increase	39.3%	66.2%	63.5%	30.3%	14.6%
(1) Pima County	14,689	22,818	34,680	55,676	72,838
% Increase	15.9%	53.4%	51.9%	60.5%	30.8%
(2) Tucson Urban Area	7,531	13,193	20,292	42,971	58,072
% Increase	----	75.1%	53.8%	111.7%	35.1%

Source: *Statistical Abstract of the U.S., 1956 (1) and (2): Arizona General Population Characteristics, Arizona Statistical Review, 1958.

TABLE 3

POPULATION PER SQUARE MILE IN THE UNITED STATES,
ARIZONA, PIMA COUNTY, AND THE CITY OF TUCSON
FROM 1900 TO 1940

Year	United States	Arizona	Pima County	City of Tucson
1900	25.6	1.1	1.6	3,766
1910	31.0	1.8	2.5	3,518
1920	35.6	2.9	3.8	3,516
1930	41.2	3.8	6.0	4,534
1940	44.2	4.4	7.9	4,548

Source: U. S. and Arizona -- U. S. Statistical Abstract, 1961.
Pima Co. and Tucson -- City-County Planning Department.

The Population of Tucson and, Pima County, 1940-1966

Prior to 1940, little detailed population information was available, for the City of Tucson had less than 50,000 persons within the city limits. Therefore, this study will not reflect information in some areas between 1940 and 1950. The first population study was made in 1941, in preparation for recommendations for a regional plan for Tucson and environs.

After the 1950 census, it became apparent that the City of Tucson would meet central city requirements of 50,000 population to designate Pima County as the Tucson Standard Metropolitan Statistical Area. In 1954, Pima County was so designated. Census tracts were delineated and were finally approved with minor changes in 1957. The first study estimating population for the Tucson Urban Area on a square-mile basis was prepared in 1956. During the decade 1950-1960, Tucson's spectacular growth led the nation with a population increase of 368 per cent.

The 1960 census provided the first detailed information on population and housing. From the nation's 261st largest city in 1950, Tucson became the 54th largest city in the nation by 1964, making it the 3rd largest city in the eight Rocky Mountain States. The area covered by the Bureau of the Census, however, is smaller than that designated as the Tucson Urban Area. The Tucson Urban Area is approximately 272 square miles, and includes not only the City of Tucson, but also residential areas not contiguous with the city, but within four to eight miles from the city limits (see Table 4).

TABLE 4

THE RELATIONSHIP OF POPULATION WITHIN CITY OF TUCSON TO POPULATION OUTSIDE THE CITY 1940-1960

	Population in Thousands			Population in Percentages		
Year	Metropolitan Tucson	City of Tucson	Outside City	Metropolitan Tucson	City of Tucson	Outside City
1940	73	36	37	100.0	49.3	50.7
1950	141	45	96	100.0	32.0	68.0
1960	266	213	53	100.0	80.0	20.0

At the turn of the century, the city limits of Tucson encompassed an area of two square miles; there were 9.55 square miles by 1950, and 72 square miles in 1964. Additional annexations to the city limits in 1965 gave Tucson a total of 75.96 square miles as of June 30 of that year.

The Importance of Migration. It is estimated that the population of the State of Arizona as of year-end 1965 was 1,640,000, an increase of 338,000 over the 1960 census figure. About 190,000 of the expansion since that date is attributable to in-migration. The ratio of migration to natural increase is currently about three to two, almost the same as it was in the 1950-1960 decade when Arizona's growth first attracted national attention.

The rate of increase in Arizona's population over 1960 calculates to 26 per cent, the second highest in the entire U.S. Two other western states, Nevada and California, rank first and third. Within Arizona's borders, of course, expansion has not been distributed equally. Widely varying population trends between the counties have been evident. Although it was found that Mohave County in northern Arizona has led the State in percentage growth, by far the heaviest numerical gains have occured in the southern counties, concentrating in Maricopa and Pima Counties, the Phoenix and Tucson metropolitan areas.

Pima County's population received a healthy boost since the 1960 census and now approximates 330,000, which is a full 20 per cent of the state. According to the 1960 Census, the city limits of Tucson showed a population of 212,892, but a special population census conducted in 1965 revealed a population of 236,877, a gain of 11.3 per cent.

Migration into Pima County has been the most important growth factor in the past two decades, the net migration into the county between 1950 and 1960 having been estimated as 80,495 persons (see Table 5). Between 1955 and 1960, the

TABLE 5

ESTIMATED NET MIGRATION INTO
PIMA COUNTY, 1930-1960

Year	Total Migration	Average Annual Migration	Average Monthly Migration
1930-40	14,125	1,413	118
1940-50	53,399	5,340	445
1950-60	80,495	8,049	670

Source: 1930-50 figures computed from Decennial U.S. of Bureau of the Census. 1950-60 figures computed using Method II of the Current Population Series, No. 133, p. 25, March 1, 1956, U.S. Department of Commerce.

total in-migration (81,503) was almost double the migration out of Pima County (46,499). Of the 80,503 in-migrants of this period, 10,768 had lived in a different county in Arizona in 1955, the remainder coming from another state (see Table 6).

TABLE 6

NET MIGRATION INTO PIMA COUNTY BY AGE GROUPS: 1955-1960

Age Group	In-migration	Out-migration	Net Migration	% of Total
5 to 19	26,095	14,800	11,295	32.3
20 to 24	9,836	5,152	4,684	13.4
25 to 44	26,719	18,883	7,836	22.4
45 to 64	13,194	5,886	7,308	20.9
65 & Over	5,659	1,778	3,881	11.0
Total	81,503	46,499	35,004	100.0

Movement between residences in Pima County has, like migration, reflected the high rate that prevails in the western part of the nation. In 1960, a total of 63,878 Pima County residents (27.3 per cent of the population five years of age and older) were living in a different residence from the one they occupied in 1955 (see Table 7).

Age groups of the population have a significant bearing on the student population projections for any institution of higher learning. In the age groups just beyond high school, the need will be education to prepare students for semi-professional and technical jobs; however, beyond these age groups, the need may be one of retraining for industry or the professions and to satisfy cultural or social needs of the community.

Pima County, in the period 1955 to 1960, had a higher proportion of persons entering the area in age groups 5-19 and 65-and-over than any other county in Arizona (see Table 6). Net in-migration of persons over 65, however, is not large enough to balance the in-migration of young people. Thus, the proportion of persons 65-and-over of the total population of Pima County in 1960 was 7.4 per cent, in comparison to 9.2 per cent for the United States.

A percentage breakdown of population distribution by age groups for the United States, Pima County, and the City of Tucson for the years 1950 and 1960 is shown in Figure 1.

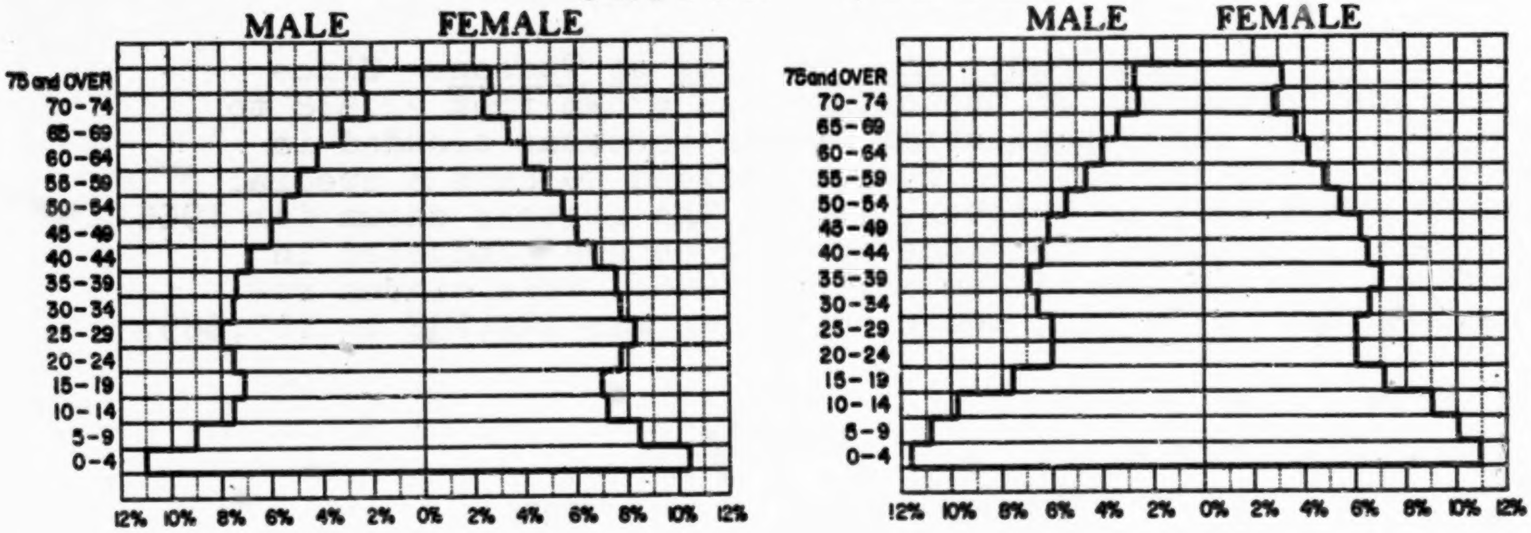
TABLE 7

POPULATION MOBILITY AND MIGRATION, PIMA COUNTY 1955-1960
BY AGE GROUP

Age	5-9	10-14	15-19	20-24	25-34	35-44	45-54	55-64	65 & Over	Total
MALE, Total	14,678	13,289	10,401	10,039	16,644	17,399	13,542	9,838	9,449	115,279
Intracounty Movers	4,469	3,598	2,571	2,377	5,420	5,137	3,465	2,256	1,793	31,086
In-migrants	5,230	4,218	3,748	5,433	7,157	6,143	3,773	2,569	2,877	41,168
Out-migrants	3,233	2,306	1,990	2,602	6,463	3,888	1,988	1,017	764	24,251
FEMALE, Total	14,472	12,854	10,244	9,312	17,069	18,698	14,563	10,952	10,326	118,390
Intracounty Movers	4,482	3,458	2,844	3,206	5,322	5,240	3,722	2,462	2,056	32,792
In-migrants	5,109	4,129	3,661	4,403	7,346	6,013	3,929	2,923	2,782	40,335
Out-migrants	3,266	2,251	1,754	2,550	4,883	3,649	1,807	1,074	1,014	22,248

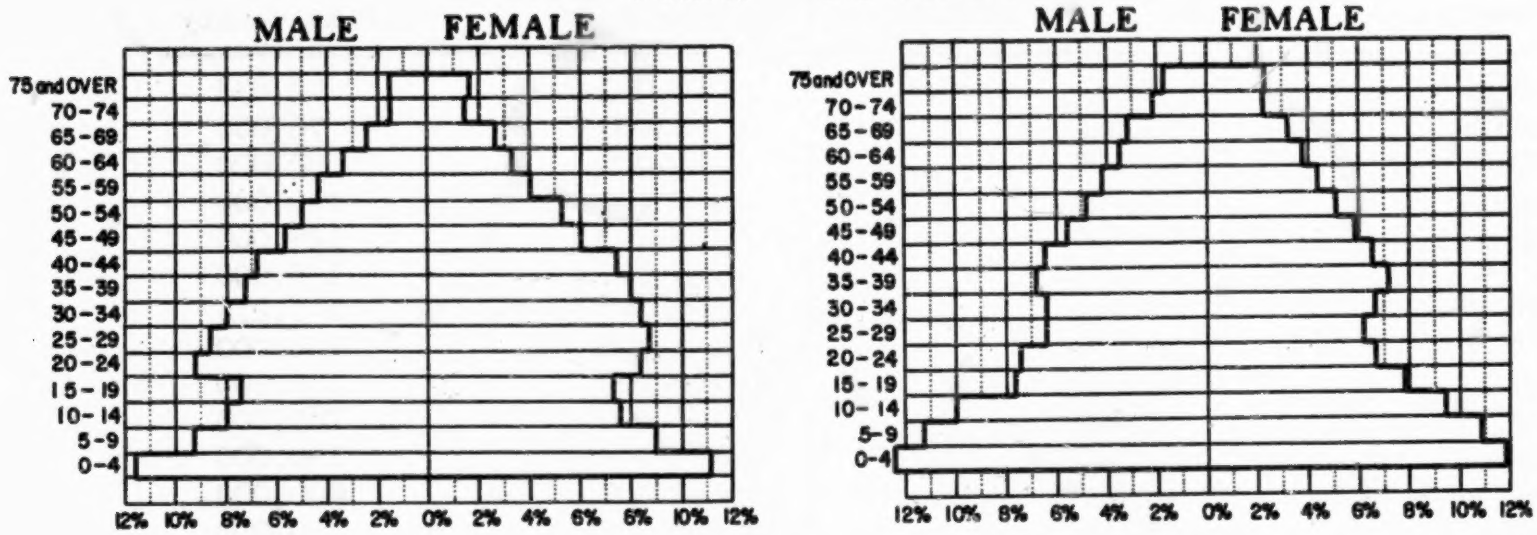
Source: U.S. Census of Population, Subject Reports; Mobility in States and State Economic Areas, PC (2) -2B.

UNITED STATES



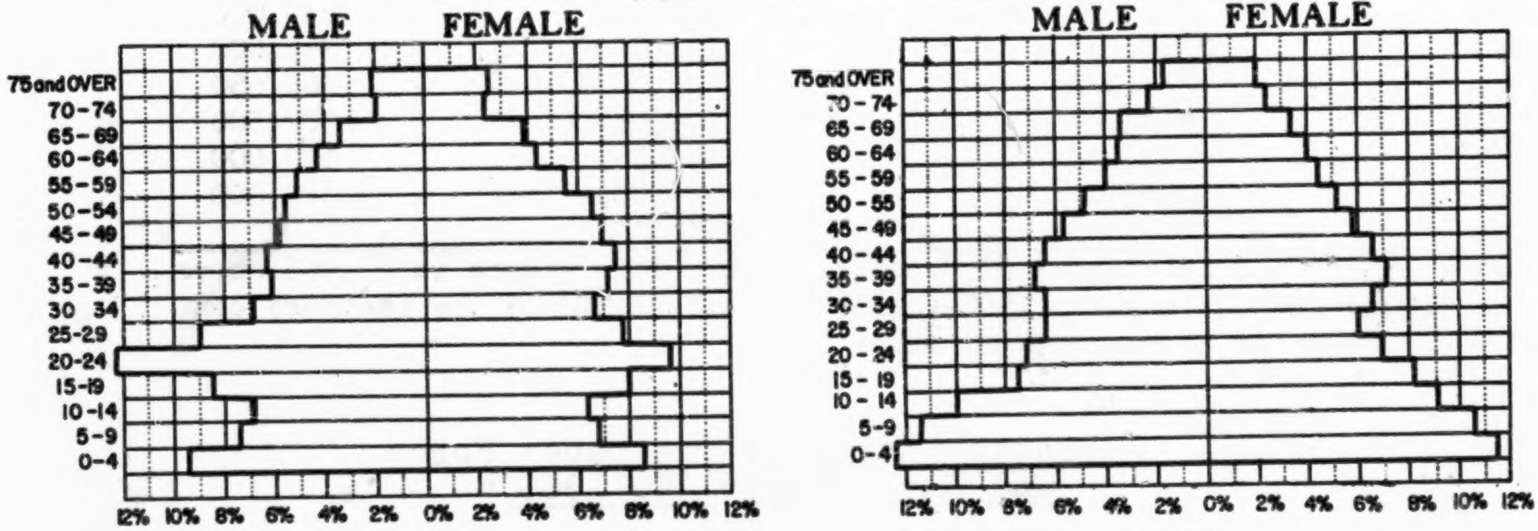
1950 1960

PIMA COUNTY



1950 1960

CITY of TUCSON



1950 1960

FIGURE 1

AGE GROUPS IN TUCSON, PIMA COUNTY
AND THE UNITED STATES

Growth of Pima County and the City of Tucson. Since 1940, the population of the county has grown from 72,838 to 340,000. The exact population became somewhat clouded in late 1964, and the City of Tucson decided to have a special census study made in October, 1965. The figures shown for 1966 in Table 8 are based upon the special census conducted in October 1965, announced January 28, 1966. This census reflected that in Tucson, women outnumber men 121,192 to 115,685.

TABLE 8

POPULATION GROWTH OF PIMA COUNTY,
TUCSON, AND URBAN AREA

Year	Tucson City Limits	Urban Area	Pima County
1940	35,752	58,072	72,838
1941	36,000	66,000	76,000
1946	40,000	88,000	98,000
1947	42,000	100,000	110,000
1948	44,000	115,000	125,000
1949	44,000	125,000	135,000
1950	45,454	130,000	141,216
1951	46,000	138,000	150,000
1952	48,000	150,000	165,000
1953	50,000	162,000	180,000
1954	54,000	173,000	190,000
1955	85,000	180,000	200,000
1956	95,000	195,000	210,000
1957	100,000	208,000	220,000
1958	105,000	215,000	230,000
1959	110,000	230,000	245,000
1960	212,000	232,000	265,660
1963	238,109	298,684	307,500
1964	240,990	290,940	320,000
1965	264,000	324,000	340,000
1966	236,877*		

*Based on the special census of October, 1965. This figure is 23,985 above the figure for the regular 1960 Census. About 12,000 of the increase can be accounted for by annexations since 1960.

Characteristics of The Labor Force and Employment 1940-1966

The Labor Force. The labor force is the number of persons fourteen years of age and over who are employed or are actively seeking employment. It does not include dependent children, housewives, students, retired or disabled adults unable to work, or inmates of various institutions.

Although population growth has been the major cause of growth in the labor force, an additional factor was the increase of the proportion of persons entering the labor force. This was due primarily to the greater participation of women. Throughout the United States in 1960, 32.2 per cent of the women were in the labor force in comparison to 15.5 per cent in 1870. This participation of women usually increases with urbanization. In 1960, Arizona had 29.8 per cent of females in the labor force in comparison to 20.5 per cent in 1940. In the same period the male participation decreased from 79.5 per cent in 1940 to 70.2 per cent in 1960. This decrease was due to the lower proportion of births in the 1930's and to an increase in the retirement of men sixty-five years of age and over.

There has been a declining rate of participation of young people 14 to 19 years of age in the labor force since the turn of the century, but the present ratios (7.5 to 8.5) will probably continue unchanged through 1975 (see Table 9).

TABLE 9

PER CENT OF AGE GROUPS IN THE LABOR FORCE
IN THE UNITED STATES, ARIZONA, AND PIMA COUNTY
1950-1960

	United States		Arizona		Pima County	
Age Group	1950	1960	1950	1960	1950	1960
14-19	8.4	8.5	7.3	8.0	7.0	7.8
20-24	12.2	10.5	12.0	11.4	12.5	12.0
25-44	45.2	43.4	50.1	47.4	49.5	46.9
45-64	29.5	33.2	27.1	30.1	27.5	29.9
65 & Over	4.7	4.4	3.5	3.1	3.5	3.4

Source: U.S. Statistical Abstract, 1962, p. 215; U.S. Census of Population, Arizona, 1950 and 1960

The employment status of Pima County is compared to that of Arizona and the United States in Table 10. Here it can be seen that (1) in 1950 and 1960, the armed forces in Pima County were an important segment of the total labor force, (2) the male and female participation in the civilian labor force of Pima County compares closely with that of the United States, (3) the proportions of persons engaged in agriculture has declined in Pima County and Arizona, and (4) Pima County in 1950 and 1960 had a slightly higher unemployment rate than the United States.

TABLE 10

EMPLOYMENT STATUS
UNITED STATES, ARIZONA, PIMA COUNTY
1950-1960
(In Percentages)

POPULATION	United States		Arizona		Pima County	
	1960	1950	1960	1950	1960	1950
Total 14 Yrs. & Over	100.0	100.0	100.0	100.0	100.0	100.0
Labor Force	56.3	56.9	54.1	50.8	53.3	48.6
% Armed Forces	3.4	2.7	3.6	2.7	5.7	7.8
% Civilian	96.6	97.3	96.4	97.3	94.3	92.2
% Male	66.6	68.6	69.1	73.7	66.7	71.0
% Female	33.4	31.4	30.9	26.3	33.3	29.0
% Agricultural	8.1	11.6	7.9	14.7	2.5	5.2
% Non-Agricultural	91.9	88.4	92.1	85.3	97.5	94.8
% Unemployed	5.6	5.3	5.3	7.6	5.8	7.4

Source: U.S. Statistical Abstract, 1962, p. 215.
U.S. Census of Population, 1960, Arizona, P.C. (1) 4C, pp. 64-66.
U.S. Census of Population, 1950, Arizona P-B3, p. 46.

In-Migrant Labor Force. Tucson employers have always been able to attract employees from the entire nation. In addition to the numerous in-migrants who come to Tucson at the request of a specific employer, many individuals are forced to come to the city due to the health need of some member of the family. Many servicemen return to Tucson after retirement to take up permanent residence. In 1964, an average of 484 in-migrant workers per month registered for employment with the Tucson offices of the Arizona State Employment Service. The occupational categories of these in-migrants are displayed in Table 11. Regarding their education, 6.6 per cent have college degrees, 15.5 per cent have some college, and 42.8 per cent have completed high school.

TABLE 11

PERCENTAGE DISTRIBUTION OF THE OCCUPATIONS OF MIGRANTS INTO PIMA COUNTY

Occupational Group	Per Cent
Professional and Managerial	11
Clerical	26
Sales	6
Service	17
Skilled	16
Semiskilled	14
Unskilled	10

Source: Arizona State Employment Service

Characteristics of The Labor Force. A survey of employment applicants compiled from applications on file with the Employment Security Commission of Arizona reflects qualifications of the labor force as of March 1965, and these are shown in Table 12.

TABLE 12

LABOR FORCE QUALIFICATIONS OF EMPLOYMENT APPLICANTS PIMA COUNTY, 1965

Occupational Group	Male	Female	Total
Professional and Managerial	488	193	681
Clerical and Sales	239	1,325	1,564
Service	501	482	983
Farm	125	1	126
Skilled - Manufacturing	583	10	593
Skilled - Non-Manufacturing	1,110	7	1,117
Semi-skilled - Manufacturing	242	181	423
Semi-skilled - Non-Manufacturing	793	54	847
Unskilled	39	12	51
Unskilled - Non-Manufacturing	599	66	665
Total Applicants	4,719	2,331	7,050

In general, the age composition of Pima County's labor force is proportional to that of the entire United States, although Pima County has a somewhat greater proportion (3 per cent) of workers the age range 25-44 (see Table 13).

However, the industrial composition of Pima County's labor force differs from the national picture; more are in service industries, and far fewer are in manufacturing (see Table 14). More complete data on the status of Pima County's labor force for 1965 may be found in the Appendix.

TABLE 13

PERCENTAGE DISTRIBUTION OF THE AGE COMPOSITION OF LABOR FORCE IN PIMA COUNTY, ARIZONA, AND THE UNITED STATES
1950-1960

Age Group	Pima County 1950	Pima County 1960	Arizona 1950	Arizona 1960	United States 1950	United States 1960
14 - 19	7.0	7.8	7.3	8.0	8.4	8.5
20 - 24	12.5	12.0	12.0	11.4	12.2	10.5
25 - 44	49.5	46.9	50.1	47.4	45.2	43.4
45 - 64	27.5	29.9	27.1	30.1	29.5	33.2
65 & Over	3.5	3.4	3.5	3.1	4.7	4.4

Source: U.S. -- U.S. Statistical Abstract.
Arizona and 1960 Pima County -- U.S. Census of Population.
1950 Pima County -- Tucson City-County Planning Department.

TABLE 14

PERCENTAGE DISTRIBUTION OF THE INDUSTRIAL COMPOSITION OF LABOR FORCE PIMA COUNTY AND THE UNITED STATES
1950-1960

Industrial Group	Pima County 1950	Pima County 1960	United States 1950	United States 1960
Agriculture	4.9	2.4	11.9	6.4
Mining	3.5	3.8	1.6	1.0
Construction	4.5	11.3	5.8	5.6
Utilities	10.3	6.7	7.5	6.5
Trade	22.0	19.6	17.7	17.3
Financial	3.5	5.0	3.2	4.0
Services	28.0	27.9	17.0	19.9
Public Administration	5.0	5.3	4.2	4.7
Other	1.1	3.4	1.4	3.8
Unemployed	7.1	5.5	4.8	5.1

Source: U.S. Census of Population, 1950 and 1960.

Employment in Pima County. The Goals for the Community report[1] points out that Tucson's prosperity in the decade from 1952-62, was based on five major basic industries; (1) state and federal government, (2) manufacturing, (3) agriculture; (4) mining, and (5) tourism. However, the relative importance of manufacturing and agriculture in the economy of Tucson declined during this prosperous decade so that government, mining, and tourism must be credited with the lion's share of the growth. Education is included under the general heading of Government.

Since 1962, manufacturing and agriculture have continued to decline in importance in the Tucson economy, while government has increased markedly. The data, which is portrayed graphically in Figure 2, "Basic Employment in the Tucson Metropolitan Area," was provided by the State and Federal governments in 1965. Manufacturing, which ten years earlier had provided 29 per cent of the basic employment in the area, provided only 17 per cent in the first quarter of 1965. Mining, with 16 per cent had become the third most important basic sector of the economy, replacing agriculture and closely rivaling the relative importance of manufacturing. By 1965, agriculture's share of basic employment had declined from 18 per cent in 1954 to 8 per cent, and tourism's share increased slightly from 8 per cent to 11 per cent.

The absolute growth in the employment provided by government, mining, and tourism has not been sufficient to sustain the growth of the over-all economy since 1962. These three will continue to be important segments of the basic economy.

The average annual employment by industries in thousands for continuous years 1959 through 1965, together with the labor supply registered for employment as of October 1965, are shown in Tables 15 and 16. These figures are intended to reflect the economic needs of the community with respect to educational needs of a community college.

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[1] Goals for the Community, a report of the Community Goals Committee appointed by the Tucson City Council (Chairman, William Voris). Mimeographed. April 11, 1966.

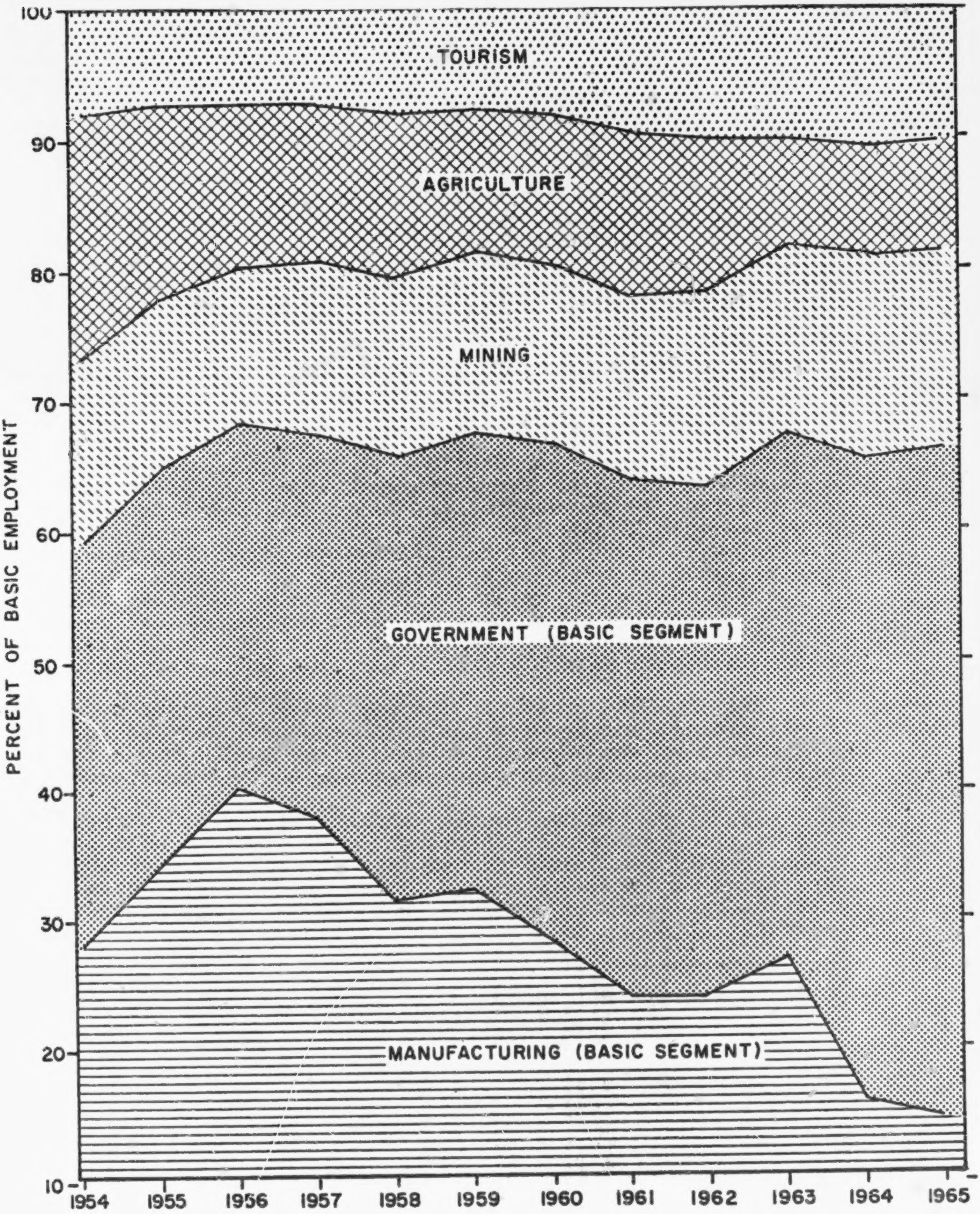


FIGURE 2

BASIC EMPLOYMENT IN PIMA COUNTY

Source: Division of Economic and Business Research, The University of Arizona

TABLE 15

AVERAGE ANNUAL EMPLOYMENT BY INDUSTRIES IN PIMA COUNTY, 1959-1965

Industry	Average Employment in Thousands						
	1965	1964	1963	1962	1961	1960	1959
Manufacturing	6.2	6.6	9.2	9.1	8.4	8.4	9.2
Mining	3.5	3.3	3.2	3.3	3.1	2.9	2.6
Contract Construction	5.4	5.9	6.5	9.5	7.8	6.9	6.9
Transportation and Utilities	5.2	5.3	5.3	5.2	5.1	5.2	5.2
Wholesale and Retail	17.5	17.1	17.8	17.2	16.3	15.8	14.8
Financial and Real Estate	3.7	3.8	3.6	3.2	3.1	2.9	2.6
Service and Miscellaneous	13.8	13.9	14.0	14.2	12.9	12.2	11.0
Government	21.0	19.8	19.0	17.3	16.1	14.9	13.7
Total Non-Agricultural	76.2	75.7	78.6	79.0	72.8	69.2	66.0

Source: Employment Security Commission of Arizona

TABLE 16

LABOR SUPPLY AVAILABLE IN PIMA COUNTY, 1965

Labor Type	Men	Women	Total
Professional and Managerial	378	122	500
Clerical and Sales	411	1299	1710
Service	433	704	1137
Farm	111	1	112
Skilled	1356	33	1389
Semiskilled	810	157	967
Unskilled	715	99	814
Total Available	4214	2415	6629

Source: Employment Security Commission of Arizona, based on those registered for employment October, 1965.

In order to show the nature of the job potential for graduates of a community college, a list of principal employers for Tucson (Pima County) follows:

LIST OF PRINCIPAL EMPLOYERS

Over 5000	Pima County Public Schools
	University of Arizona
2000-2500	Hughes Aircraft Company
	City of Tucson
1300-1800	Davis-Monthan Air Force Base (Civilian Only)
	Phelps Dodge Mining Company (Ajo)
	Pima County
	Southern Pacific Railroad
1000-1100	Tucson Medical Center
900-1000	Mountain States Telephone Company
700-800	American Smelting and Refining
	Tucson Gas and Electric
600-700	St. Mary's Hospital
	Krueger Air Conditioning
	U.S. Post Office
500-600	Pacific Fruit Express
	Southern Arizona Bank
	Veterans Administration Hospital
400-500	Anaconda Mining Company
	Bell Aerosystems (including Ft. Huachuca instillations)
	Lucky Stores
	Pima Mining Company
	M. M. Sundt Construction Co.
	Tucson Newspapers, Inc.
300-400	Duval Sulpher and Potash
	Montgomery Ward
	St. Joseph's Hospital
	San Xavier Rock & Sand
	Sears Roebuck Co.
	Valley National Bank
200-300	Arizona Portland Cement Co.
	The Ashton Company
	AURA - Kitt Peak Observatory
	Utah Construction Company
	A. J. Bayless Markets
	El Rancho Markets
	Haskell Laundry
	Infilco
	Levy's of Tucson

LIST OF PRINCIPAL EMPLOYERS
(Continued)

200-300	Pioneer Hotel Radio Corporation of America Save-Co West-Cap Arizona Globe Discount

The Importance of Davis-Monthan Air Base. The impetus of World War II seems to have been primarily responsible for the wave of population with which Tucson was later engulfed. As war clouds covered the horizon, the United States Army Air Corps activated Davis-Monthan Air Base on February 4, 1941. The base is named in honor of two residents of Tucson who were killed in separate aircraft accidents in the early 1920's, Lt. Samuel H. Davis and Lt. Oscar Monthan.

In a twenty-five year period, the primary mission of the base has changed several times from that of training B-24 heavy bombardment units and crews to storing excess aircraft to training crews of B-47 jet bombers. Currently under the aegis of the Strategic Air Command, the base serves as home of a Titan Missile Wing, a WU-2 Strategic Wing collecting upper stratosphere air samples, a Combat Support Group responsible for maintenance of the base, a medical group, a fighter-pilot training wing, and a military aircraft storage and disposition center for excess aircraft in the Department of Defense.

It is probably impossible to over-estimate the effect of Davis-Monthan on the economy and population of Tucson. Almost nine percent of the population of metropolitan Tucson consists of military personnel and their dependents and civilian employees of the base. It is estimated that over 3500 retired personnel live in the area. The number of people who have returned to Tucson to live after having been stationed here during military training cannot be estimated.

Economically, the local community receives over $36,500,000 annually from base expenditures for payroll, transportation, communications, utilities, maintenance of facilities, construction, and other services. Davis-Monthan Air Force Base can definitely be considered one of the most important "industries" in the City of Tucson and the State of Arizona.

Education, 1940-1966

Growth of the Public Schools. In 1940 there were 13,850 students in the public schools in Pima County. By 1965 there were 72,437. While the 32 school districts that existed in 1940 have been consolidated so that there are currently 17 school district areas, the number of schools has doubled. In 1940 there were 53 elementary and junior high schools with 11,409 students; in 1965, 101 elementary and junior high schools served 52,450 students. In 1940, three high schools and one high school with only grades 9 and 10 (Amphitheater) enrolled 2,441 students; but in 1965, ten high schools and two high schools with only grades 9 and 10 (Sahuarita and Canyon del Oro) enrolled 19,987 students.

The majority of students in the county are enrolled in the five school districts of Metropolitan Tucson: 60,761 in eight high and 88 elementary schools, as of 1965. The teacher-student ratio in these schools is more favorable than the national average, and teacher's salaries in Metropolitan Tucson are in the upper 20 per cent of the nation (see Table 17).

TABLE 17

STUDENT-TEACHER RATIO, TEACHERS' SALARIES AND PER CAPITA EXPENDITURES IN SCHOOLS OF METROPOLITAN TUCSON AND THE UNITED STATES
1964-1965

	National Average	District No. One	Amphi-theater	Sunny-side	Flowing Wells	Catalina Foothills
Pupils per Teacher	25.5	23.9	20.8	22.6	--*	20.2
Teacher's Average Salary	$5,963	$7,212	$7,310	$6,950	$6,928	$5,911
Expenditures per Pupil	$ 518					
Elementary		$ 478	$ 540	$ 431	$ 508	$ 518
Junior High		478	540	431	--	--
Senior High		763	650	628	796	--

Source: National averages, supplied by U.S. Department of Health, Education and Welfare, are for 1963-1964, except expenditures per pupil which is 1961-1962. Tucson figures furnished by local school officials.
* Figures not available.

History of School Bond Issues, 1955-1966. The great expansion of school facilities has rested upon the success of bond issues. However, the history of these proposals in the past ten years varies from district to district.

In the largest district in the county, Tucson School District Number One, there have been some reversals in school bond issues over the past eleven years. The largest bond proposal ever requested in the district, amounting to $18,989,000 was defeated in March, 1964. Nearly 25,956 property owners voted -- nearly double the 13,007 who turned out for the district election on October 21, 1958, and 1200 more than the city's largest bond election turnout of 24,765 on June 28, 1962. This 1964 defeat was the fourth school bond issue to fail in recent years. In June, 1957, a proposal was defeated by a vote of two to one, and after being revised downward, was defeated again in October, 1957. A summary of Tucson District One bond issues from 1955 through 1966 follows:

DATE	RESULT OF VOTE	AMOUNT OF BONDS
1955	Passed	$ 8,585,000
1957	Defeated 2 to 1	7,325,000
1957	Defeated by 504	4,300,000
1958	Passed	7,358,000
1960	Passed	9,990,000
1962*	Passed	3,782,000
1964	Defeated	18,989,000
1965	Passed by 3 to 1	11,450,000
TOTAL		$70,779,000

* At this election, the proposal for funds to build Sahuaro High School ($6.2 million) was defeated.

According to an Arizona Daily Star feature story on March 11, 1964, a group named Property Owners' Protective Association were the chief opponents of a Tucson District One issue containing three plans to cover construction from 1964 through 1967. The Propositions were:

(1) Whether to bond the district for $5,255,000 to build four new elementary schools, to make additions to other elementary schools, to build two new junior high schools and to make additions to other junior high schools.

(2) Whether to bond the district for $13,199,000 for three high schools -- Sahuaro on the east side, plus west side and southeast side high schools.

(3) For $535,000 to construct central kitchen facilities at a cost of $350,000 and to add to the Education Center at 1010 East 10th Street at a cost of $185,000.

The Sahuaro High School, included in District One's 1962 issue was defeated for the second time March 10, 1964. An editorial in the Arizona Daily Star on June 10, 1964 reported the results of a Special Survey Committee as recommending that the reduction of 210 teachers and tighter management could save about $3 million. Editorials in the Tucson Daily Citizen on March 11, 1964, and March 16, 1964, attacked the extravagance of school administration.

Nevertheless, in 1965, two propositions carried:

(1) A $9,420,000 high school outlay, including $5.5 million for Sahuaro High School on the east side and the first phase of an unnamed high school near "A" Mountain on the west side, by a vote of 9,510 to 3,410.

(2) A $2,030,000 elementary bond issue, most of which will go for a new junior high and an elementary school, by a vote of 9,332 to 3,437.

Success in this bond election was attributed to the cooperative efforts of school board and citizens groups such as the Municipal Capital Improvements Committee on School Needs, headed by Robert Brooks. The total votes cast in this election was 12,976, or about half of the record turn out for the 1964 bond election.

In recent years no bond issues have been defeated in the Amphitheater School District. In 1954, $487,000 to add to the high school site was approved. In 1956, propositions of $761,000 for a new elementary school and $84,000 for improvement of high school athletic facilities were passed 653 to 307 and 647 to 313, respectively. In June, 1959, five issues were passed by large margins: $849,000 for two new elementary schools (586 to 153); $100,000 to purchase sites (579 to 156); $450,000 to add classrooms to the high school and construct a library (562 to 159); $425,000 to build a high school auditorium and music room (551 to 182); and $80,000 to purchase school sites -- the Canyon del Oro site (550 to 154).

The most impressive election in Amphitheater School District was that of June, 1961. Here the voters approved by large margins $1,404,000 for the first stage construction of Canyon del Oro high school (719 to 215), and $2,327,000 for the second stage of that building program (718 to 214). In addition, the voters in Amphitheater district approved $720,000 to improve existing facilities (726 to 200); $1,204,000 for building and equipping two elementary schools and acquiring sites, (720 to 204); and $910,000 for site, building, and equipping of a new junior high school (718 to 210).

DATE	RESULT OF VOTE	AMOUNT OF BONDS
May 1954	Passed	$ 487,000
Nov., 1956	Passed 2 to 1	845,000
June 1959	Passed 3 to 1	1,904,000
June 1961	Passed 3 to 1	6,565,000
Total		$9,801,000

These bond issues were for schools for the future, and as yet, one of the elementary schools and the junior high schools have not been built. They are not yet needed, and the district does not at this time have the bonding capacity to construct them. But, when there is the need and the capacity, there is authorization to build these schools.

There has never been a bond issue defeated in Flowing Wells School District Number Eight. In recent years, this district has passed the following bond issues with an overwhelming majority:

DATE	RESULT OF VOTE	AMOUNT OF BONDS
March, 1962	Passed 3 to 1	$ 160,000
May, 1954	Passed 3 to 1	340,000
July, 1956	Passed 3 to 1	700,000
Nov., 1958	Passed 3 to 1	250,000
Feb., 1960	Passed 3 to 1	1,125,000
Dec., 1961	Passed 3 to 1	300,000
May, 1965	Passed 4 to 1	2,000,000
	Total	$4,875,000

Similarily, in Sunnyside School District there have been no defeats for school bond issues. The first four-year high school was constructed in 1957; previous to this time there was a two-year high school located at the present junior high school. Juniors and seniors attended Tucson high schools.

DATE	RESULT OF VOTE	AMOUNT OF BONDS
1948-1957	Passed	$1,377,000
1959	Passed	1,329,000
1961	Passed	1,420,000
	Total	$4,126,000

Although in March, 1964, voters in Catalina Foothills District rejected a bond issue in the amount of $260,000, in May, 1965, they approved a $135,000 bond issue for school construction and land purchase by a 258 to 91 margin.

DATE	RESULT OF VOTE	AMOUNT OF BONDS
March, 1964	Defeated 2 to 1	$ 260,000
May, 1965	Passed 2.5 to 1	135,000

August 4, 1965, voters in Pima County School District Number Thirty authorized a new school, and on September 8, 1965 the Pima County Supervisors approved the sale of $995,000 in school bonds by the Sahuarita High School District. The funds will be used to finance the construction of a new 250 student high school adjacent to the district's single elementary school.

The Marana School District has never been turned down in a school bond election. In 1955 and 1956 voters allotted $758,000 for adding 32 classrooms and a cafeteria to the elementary schools. In two elections in 1959 a total of $810,000 was authorized for building a new gymnasium and adding classrooms to the high school.

DATE	RESULT OF VOTE	AMOUNT OF BONDS
Jan., 1955	Passed	$ 415,000
Dec., 1956	Passed	343,000
April 1959	Passed	575,000
Nov., 1959	Passed	235,000
Total		$1,568,000

In the Tanque Verde School District, two recent issues have been approved: A $35,000 proposition in January, 1959, and a $78,000 bond issued in January, 1960, and in the Three Points School District, an issue for $12,000 was approved in June, 1962. There has been no major bond election in Ajo during the past five years.

Parochial and Private Schools. Tucson's parochial school system includes both Catholic and Lutheran parochial schools, comprising three high schools and eighteen elementary schools. In addition, numerous private schools are easily accessable to Tucson residents, and private ranch schools are extremely popular. Private schools catering to exceptionally gifted children are also available.

The University of Arizona. The University of Arizona had a total enrollment of 21,103 for the 1964-65 school year with a faculty of 2,115. There were 15,590 undergraduates and 3,091 candidates for degrees. During 1964-65, the University awarded 1,967 bachelors degrees, 645 masters degrees, and 99 doctoral degrees -- a total of 2,711 degrees.

The University has twelve colleges: Agriculture, Archtecture, Business and Public Administration, Education, Engineering, Fine Arts, Graduate, Law, Liberal Arts, Mines, Nursing, and Pharmacy. A College of Medicine will be completed by 1967. Currently the University offers the masters degree in 71 areas of study and the doctorate in 42 fields.

In 1964-65, the University received more than $9 million in support of its research activities from public sources, including the Atomic Energy Commission, the National Institute of Health, the National Aeronautics and Space Administration, the U.S. Office of Education, Department of Agriculture, Department of the Interior, Department of Navy, and from private sources such as the Alfred P. Sloan Foundation, the American Cancer Society, the Ford and Rockefeller Foundations.

The University has numerous renouned divisions of specialized research, including the Applied Research Laboratory, the Arizona Transportation and Traffic Institute, the Engineering Experiment Station, the Institute of Atmospheric Physics (including Solar Energy Research Laboratory), the Lunar and Planetary Laboratory, and the Numerical Analysis Laboratory.

The summer session which is open to undergraduates, graduate students, high school graduates and the general public, offers 32 programs and more than 490 courses. In the summer of 1964, enrollment was 7,315. There is also an active continuing education program offered throughout the state. All courses are held in the afternoon or evening, and college credit is offered for this work. The 1964-65 enrollment was 811. In addition, approximately 125 courses are offered by correspondence in 25 major fields. The 1964-65 enrollment was 1,611.

Beyond this, special educational courses in the fields of Distributive Education and other non-credit courses have been offered since 1964. In the spring of 1966, over 500 students were enrolled in twenty non-credit courses, and 125 were enrolled in five Distributive Education Courses.

The University of Arizona offers local employers an excellent source of managerial and technical employees. Recently completed studies indicate that the graduates have a strong geographical preference for living in the southwest and, more specifically, Tucson. In addition to the resumes of the graduating class, the Placement Office of the University maintains an extensive file of graduates of previous years, now scattered across the country, who have indicated a desire to return to Tucson if a suitable opening arises.

Other Universities and Colleges in Arizona. In addition to the University of Arizona in Tucson, there are two other state supported universities. Arizona State University is at Tempe, 120 miles from Tucson, and has an enrollment of approximately 17,000 students. Northern Arizona University is 250 miles from Tucson with an enrollment of 2,700.

Arizona has four junior colleges within a 250 mile radius of Tucson: Arizona Western College, Cochise College, Eastern Arizona College, and the Maricopa County Junior College System.

The nationally famous American Institute for Foreign Trade is located 125 miles from Tucson. It offers post-graduate courses in foreign languages and in the commerce and customs of specific nations.

Although Grand Canyon College in Phoenix, a coeducational four-year college sponsored by the Southern Baptist Church, is the only private college in the state, funds have been raised for a new liberal arts college at Prescott, 200 miles from Tucson. It is hoped that this institution will be ready for students before 1967.

Public Occupational Training Facilities. Tucson high schools offer trade and industrial education courses in the fields of auto mechanics, machinist trade, metal working, printing, and woodworking. In addition, adult education courses are offered by the Adult Evening School affiliated with the public school system. (For courses offered and enrollment figures see the Appendix.)

Under the auspices of the Manpower Development and Training Act, training is being conducted in numerous occupations by the public school system in cooperation with the Vocational Education Department of Arizona and the Arizona State Employment Service.

Apprenticeship. Apprentice training is widely available through local unions and employers. In cooperation with the Bureau of Apprenticeship and Training, a company can establish a training program to meet its particular requirements. Most of the apprenticeship programs are administered by local or state joint apprenticeship committees comprised of management and labor representatives. Tucson schools have cooperated fully with the programs.

The following is a list of some of the apprenticeship programs presently being offered in Tucson:

Boilermaker
Bricklayer
Carpenter
Cement Mason
Electrician
Glazier
Iron Worker
Lather
Lithographer
Maintenance Mechanic
Millwright
Operating Engineer
Painter & Decorator
Photo-engraver
Pipefitter - Steamfitter
Plasterer
Plumber
Printer
Sheet Metal Worker
Sterotyper
Terazzo Worker
Tile Setter

__Private Occupational Training Facilities__. As of January, 1966, approximately 1,100 students were enrolled in seventeen vocational-technical schools in Pima County. These schools and their programs are:

(1) Arizona College of Commerce, 131 E. Broadway, Tucson
  - Stenographic
  - Secretarial
  - Accounting
  - Business Administration
  - Clerical

(2) Durham Business College, 443 S. Stone Ave., Tucson
  - Secretarial Science
  - Executive Secretarial
  - Junior Accountant
  - General Business
  - Bookkeeping
  - Stenographic
  - Electronics
  - Drafting

(3) Lamson Business College, 537 S. Stone Ave., Tucson
  - Stenographic
  - General Secretarial
  - Executive Secretarial
  - Junior Accounting
  - Clerical & Bookkeeping
  - Higher Accounting
  - Business Administration

(4) Tucson School of Real Estate, 4351 E. Broadway, Tucson

(5) American Institute of Technology, 204 W. Grant Rd.
  - Computer Programmer
  - Data Processing

(6) ABC Trade School, 3848 E. 49th St., Tucson
  - Combination Welding
  - Refrigeration & Air Conditioning

(7) Carl's Television School, 904 W. Grant Rd., Tucson
  - Practical TV Servicing

(8) Right Way Upholstery School, 4444 N. 4th Ave., Tucson

(9) Milan Studio School of Fine & Applied Art, 3401 W. Columbus Blvd., Tucson
  - Commercial Art
  - Interior Design
  - Fashion Illustration

(10) Desert School of Sewing & Fashion Design, 1841 E. 6th Street, Tucson

(11) Tucson Beauty College, 375 S. Stone Ave., Tucson

(12) Chenault School of Beauty Culture, 133 S. 6th Ave.

(13) American Beauty College, 5743 E. Speedway, Tucson

(14) Arizona Academy of Beauty, 322 E. Speedway, Tucson

(15) Golden School of Beauty Culture, 825 E. Broadway

(16) Tucson Barber College, 1016 E. Broadway, Tucson

(17) S. H. Kress Practical Nursing School, 2900 S. 6th Ave.

The S. H. Kress Practical Nursing School, which opened in September 1957, prepares selected, qualified applicants to give nursing care to patients of all ages, under the direction of a licensed physician or a registered nurse. Upon completion of the twelve month course, the graduate is eligible for the state licensing examination. Graduation from a recognized high school or certification of completion of a high school equivalency test is a requisite for entrance.

Most business programs (clerical, stenographic, secretarial, bookkeeping, accounting) are of nine to fifteen months duration, and all have entry requirements of a high school degree. The technical courses are from six months to one year in duration, and have entry requirements of an 8th grade education or less. Cosmetology programs require 1,800 hours or ten months; entry requirements range from two years of high school to a complete high school education.

In addition, a number of people receive training in a variety of subjects taught in the American Institute of Banking program. Enrollment figures and the subjects offered by this program since 1959 are found in the Appendix.

Miscellaneous Schools. In addition to the schools listed, the following are also located in Tucson: The National Foundation for Asthmatic Children, the State School for Deaf and Blind, the Tucson Indian Training Center for the Handicapped, five flight training schools, seven private art schools, and thirty-three private elementary and nursery schools.

St. Mary's Hospital School of Nursing which has graduated from fourteen to twenty registered nurses each year since 1961 is discontinuing after graduation of the 1966 class.

Pima County: Development Potential from 1967 to 2000

In analyzing the growth of Pima County area to the year 2000, this study will attempt to focus attention on trends in development potential, with emphasis on community assets, trends in population, economic resources, and the other criteria affecting the long range planning for the future of Tucson and Pima County.

Community Assets. The Economy chapter of the Goals for the Community report emphasized that in its endowment of natural resources, the Tucson metropolitan area has two major assets -- climate and mineral resources. The moderate, semi-arid climate offers relatively pleasant and healthful living conditions, and this apparently has a favorable effect on the productivity of the work force. The region also possesses valuable mineral resources in the form of large, low-grade deposits of copper and molybdenum sulfides which are amenable to extraction using modern, large-scale mining methods. Limestone and other industrial minerals are found nearby.

The physical location of the area is an advantage of increasing importance. The Tucson Metropolitan Area is located on an axis which connects two of the fastest growing areas of the nation, and passes through a third. The axis connects Florida and Southern California and passes through central Texas. A market of 19 million persons, twelve freight hours away, lies at the western terminus of this axis. In the more immediate area, the major metropolitan area of Phoenix is only slightly to the north, and to the south lies the gateway to an expanding area of Mexico.

In addition to its natural attributes, Tucson possesses a further advantage in its population and labor force. The area's population is young, and it has an educational attainment level which is above average. The combination of a university and relatively pleasant and healthful living has attracted a considerable intellectual community, and work experience gained in the sporadic activities of the local electronics and aerospace industries has produced a limited labor for skilled in current technologies.

Community Liabilities. The Goals for the Community report also pointed out that the natural resources of a semi-arid climate, such as Tucson, do not include a generous supply of water. Although present water supplies are adequate for residential growth and increasing household use of water, agriculture and types of industries which are heavy water users cannot be supported unless new water sources are made available to the community.

For heavy industry, which involves sizeable transportation costs for raw materials, Tucson's physical location is a definite liability. Not only are there transportation costs associated with raw materials, but the immediate market area along the Phoenix-Tucson-Mexico axis is not large enough yet to justify a location in this area, and there are also substantial transportation cost associated with the movement of finished goods. This problem is somewhat intensified by the fact that all western regional shippers suffer from a rail cost differential.

The Goals Committee brought to light another liability which is less tangible -- even difficult to define accurately -- which they described as "community attitude." The committee charged that there are few persons in the community who will work enthusiastically for an expanding Tucson economy.

The intention of the present report is to stimulate and guide changes which will enrich the economic and cultural climate of Tucson and Pima County. A community junior college could serve to expand one of Tucson's most important industries -- that of education to keep pace with other growth factors.

Population Growth to 1980. The overall population projection for Tucson and Pima County to the year 1980 is summarized in Table 18, and these can be compared to the projections, to the year 2000 for Pima County, Arizona, and the United States that are displayed in Figure 3.

TABLE 18

PROJECTED POPULATION GROWTH OF TUCSON AND PIMA COUNTY

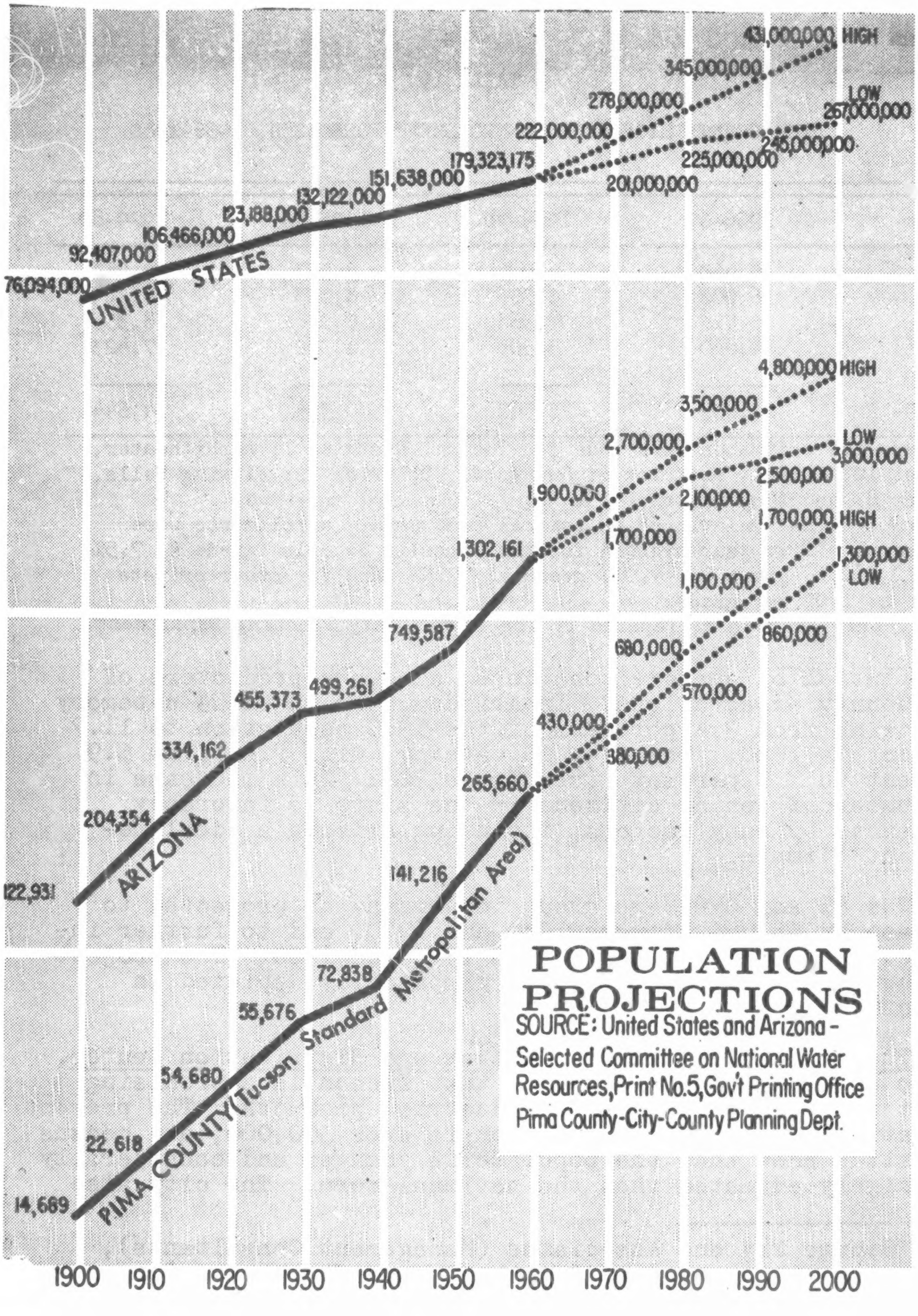
Year	City of Tucson	Area	Pima County
1970	266,000	372,000	460,000
1980	340,000	560,000	780,000

The 1970 projection is based on average of high and low estimate by the City-County Planning Department. City of Tucson figures assume no substantial change in city limits.

In order to determine the impact of Tucson and Pima County population on educational facilities in the next two decades, the projected high school enrollments for the county through 1980 must be examined. A summary of these enrollment figures which show a 50 per cent increase by 1980 are shown in Table 19, and a detailed analysis by district can be found in the Appendix.

Population Growth - College Age and Persons Over 65. The March, 1966 issue of Arizona Progress published by the Valley National Bank, points out that the Arizona population, as a result of continuing in-migration, is forecast to increase at at rate three times faster than the entire nation. The relative change in age distribution in Arizona will, however, largely coincide with changes that occur on the national scene.

Both the college age population and persons aged 65 and over are multiplying more rapidly than other age groups. Experience shows that Tucson and Pima County trends follow closely those of the state, insofar as breakdown of population figures by age group are concerned; therefore, projections for Arizona resident population by age, and per cent



SOURCE: United States and Arizona - Selected Committee on National Water Resources, Print No.5, Gov't Printing Office
Pima County-City-County Planning Dept.

FIGURE 3

POPULATION PROJECTIONS, PIMA COUNTY, ARIZONA
AND THE UNITED STATES

TABLE 19

PIMA COUNTY HIGH SCHOOL ENROLLMENT FORECASTS, 1966-1980

Grade	1966-67	1969-70	1975-76	1979-80
9	6,450	6,905	8,753	9,662
10	6,002	6,754	8,233	9,204
11	5,517	6,368	7,036	8,355
12	4,840	5,505	6,332	7,423
Total 9-12	22,837	25,562	30,354	34,644

Separate estimates were made for Tucson, District 1; Amphitheater, District 10; Marana, District 6; Sunnyside, District 12; Flowing Wells, District 8; and Ajo, District 15.

Proportional relationships to toal Pima County enrollments were computed on a five year average for the Catholic Schools (grade 9, 7.5%; grade 10, 6.5%; grade 11, 7.0%; grade 12, 7.5%) and for other private schools at 1.0% per grade.

Source: Special report prepared by The Pima County Planning Department.

distribution by age are considered adequate predictors of Pima County expectations. In Arizona, the 18 to 24 category will climb from 9.4 per cent of the 1960 population to 11.7 per cent in 1980. The over 65 category will rise from 6.9 per cent to 7.9 percent, (see Table 20). This increase in the number of senior citizens in the state is favorably influenced by many factors, including Arizona's ideal retirement climate.

The 65 and over age group in Arizona is projected to increase by 55,000 between 1960 and 1970, and to further increase by another 66,000 between 1970 and 1980. The projected growth for all age groups is graphically depicted in Figure 4.

Tucson's Potential as a Market and Distribution Center. George Fry and Associates[1] find that Tucson is a promising market for both consumer and industrial products. The present population of metropolitan Tucson is over 300,000, and census statistics show that the populace is younger and considerably more highly educated than the national norm. The city also

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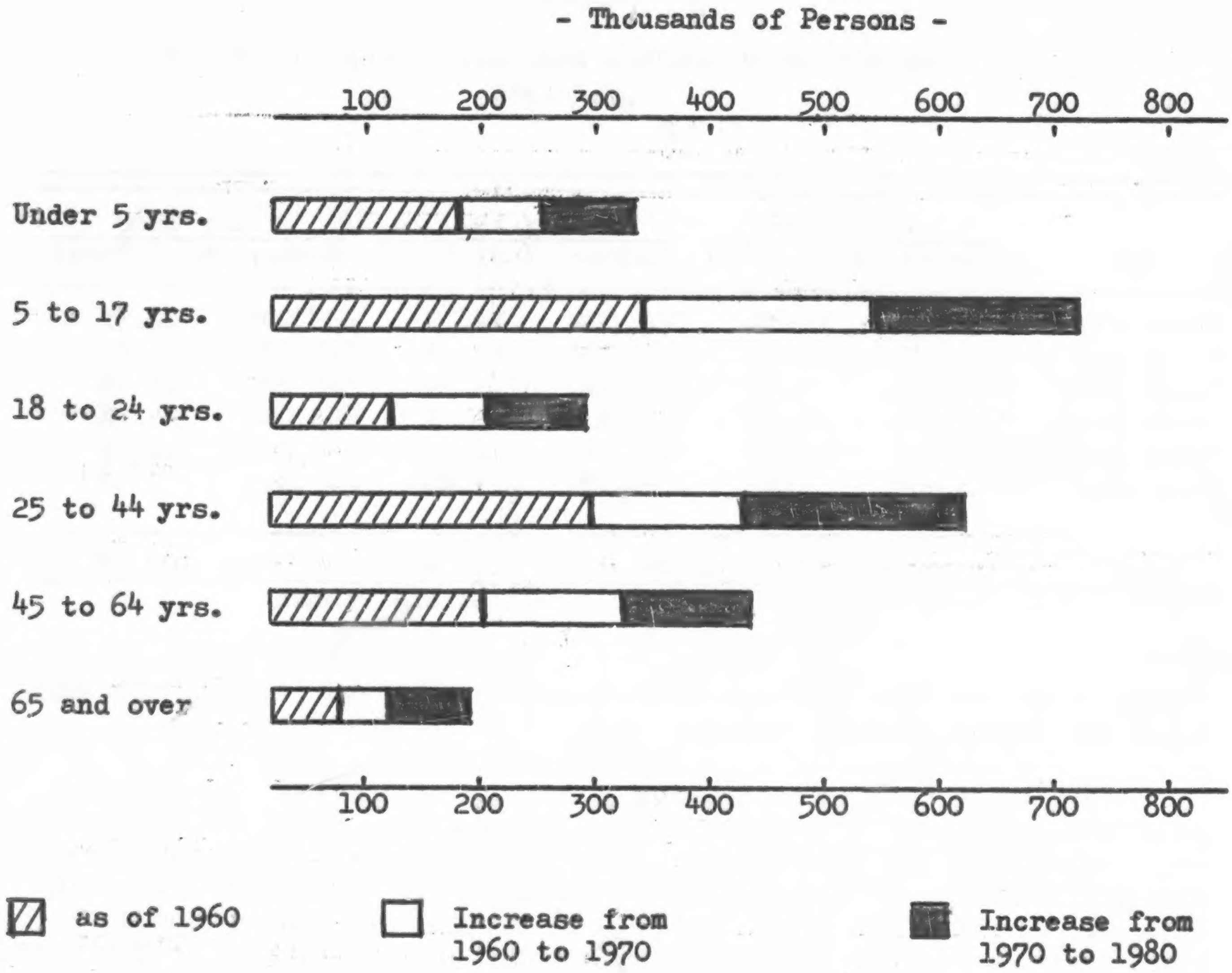
[1] George Fry and Associates (Management Consultants), Tucson, a report prepared for the Tucson Chamber of Commerce, Chicago, Illinois, April, 1965. Commonly referred to as the Fry Report.



Age Group	Increase 1960 to 1970	Increase 1970 to 1980
Under 5 yrs.	71,000	95,000
5 to 17 yrs.	200,000	162,000
18 to 24 yrs.	105,000	84,000
25 to 44 yrs.	112,000	188,000
45 to 64 yrs.	131,000	89,000
65 and over	55,000	66,000

Data from U.S. Bureau of Census

FIGURE 4

PROJECTION OF ARIZONA'S POPULATION, BY AGE GROUP, 1960-1980

TABLE 20

PROJECTION OF ARIZONA RESIDENT POPULATION BY AGE
1960-1980

Age	April 1960		July 1970		July 1980	
	Number	% of Total	Number	% of Total	Number	% of Total
Under 5 yrs.	167,000	12.8%	238,000	12.1%	333,000	12.5%
5 -17 yrs.	350,000	26.9%	550,000	27.8%	712,000	26.8%
18-24 yrs.	122,000	9.4%	227,000	11.5%	311,000	11.7%
25-44 yrs.	343,000	26.3%	455,000	23.0%	643,000	24.2%
45-64 yrs.	230,000	17.7%	361,000	18.3%	450,000	16.9%
65 & over	90,000	6.9%	145,000	7.3%	211,000	7.9%
Total	1,302,000	100.0%	1,976,000	100.0%	2,660,000	100.0%

Source: U.S. Department of Commerce, Bureau of the Census

ranks 62nd in the nation in net effective buying income and 62nd in total retail sales.

The city has experienced tremendous growth during the past decade, and there is every indication that this growth will continue in the future. During the last fifteen years, the population of Tucson has increased by over 400 per cent. Similar growth has been reflected in all business indices; over the past five years, bank deposits increased 53 per cent, electrical consumption grew 53 per cent, and air freight increased 219 per cent.

In addition to its own market, Tucson is a centrally located distribution point to all of the major markets of the Southwest. Los Angeles, San Diego, Santa Fe, Albuquerque, and El Paso lie within a 500 mile radius, and are easily accessible from Tucson's excellent transportation network.

Tucson is also an excellent distribution center for Mexican trade. Nogales is the second largest port of entry to Mexico, with total trade in 1964 of $122 million. Over 94 per cent, or $73,376,571 of the imported goods were food and and live animals, and approximately two-thirds, or $29,965,784 of the exports was machinery and transportation equipment.

James E. Patrick, President of the Valley National Bank, speaking at the 1966 Industrial Development Institute, on the subject "What has Arizona Got to Sell?" added emphasis to the findings of the Fry report. He said,

> As the gateway to Mexico, we have a fantastic opportunity if we know what to do with it. A major social

> revolution is taking place in that country. A substantial middle class is emerging there which insures growth and prosperity and economic change. If we work with Mexico for our mutual benefit, we can open the gateway to Central and South America by the effect of demonstration. In the State of Sonora there are seven rivers that the Mexican government is planning to dam to develop power and irrigation. The foodstuffs and fiber that will follow this achievement will make a great opportunity for anyone who can work with Mexican developers and businessmen.

Potential of the Health and Medical Industry. The Goals for the Community study points out that any community must have at least a minimal amount of health services available just to take care of its own population. Tucson has already progressed beyond this point and its health and medical facilities now serve a much broader area. Health must be regarded as one of the community's basic industries.

Tucson has excellent medical facilities. Following is a list of Tucson's civilian and governmental hospitals as of June, 1965:

(1) Davis-Monthan Air Force Hospital: Financed by Federal Funds, 60 beds.
(2) Oshrin Hospital: Financed by Federal funds for Indian Tuberculosis patients, 99 beds.
(3) Palo Verde Hospital: Psychiatric only: Financed by fees, 30 beds.
(4) Pima County Hospital: Financed by taxes, 160 beds.
(5) Saint Joseph's Hospital: Financed by Catholic Church and fees, 124 beds, 30 bassinets.
(6) SaintMary's Hospital: Financed by Catholic Church and fees, 265 beds, 23 bassinets.
(7) Tucson General Hospital: Osteopathic, Financed by fees, 156 beds, 12 bassinets.
(8) Tucson Medical Center: Financed by fees, 443 beds, 100 bassinets.
(9) Veterans Administration Hospital: Financed by Federal Funds, 402 beds.

Further expansion of this basic industry deserves serious consideration. Tucson could build a reputation which places it in the forefront of curative and preventive medicine, a reputation which stresses health, not illness. With the tremendous strides made by medical research and medical practitioners in the past two decades, this is possible.

With the increased emphasis on individualized preventive medicine Tucson could, with a minimal amount of coordinated effort, build a reputation in this area with the existing medical and recreational facilities. Medical diagnosis, evaluation, and rehabilitation also offer challenging opportunities, and such opportunities might well be developed within the institutional framework of a regional health center as outlined in the Debakey Bill, passed by Congress in 1965.

The health and medical industry was given substantial consideration in the Goals report. It recognized the natural assets that make this Tucson industry promising: The semi-arid climate and the year-round comparatively warm temperatures. The Committee for Economic Development also emphasis the importance of climate. However, until now, Tucson has provided few facilities beyond the minimal comforts of a retirement area, but with planning, coordination, and community support, Tucson could be in the forefront of curative and preventive medicine.

As the national government moves increasingly toward assuming the obligation for the medical and health care for those unable to provide it for themselves, Tucson can play a part in the nationwide program. In addition to the desirability of establishing a regional health center in Tucson, the University of Arizona research facilities in the sciences, and the new Medical College now being established on the campus, will provide the intellectual base for the growth and development of the medical industry. It only remains to coordinate the efforts of existing organizations, and begin an expanded facility development program for nationwide appeal.

Medical and dental laboratories, research and testing laboratories, non-profit educational and scientific research agencies are among the industries recommended by the Fry Report for solicitation and development and the Committee for Economic Development recommended that the City Council and the community recognize the economic significance of the health and medical field and make every effort to meet the needs to which further expansion will give rise. These efforts are likely to include the continued support of local fund-raising campaigns, and the coordination of health programs offered by local, state, and national governments. And they might well include the establishment of an educational program at the community college level for the development of a greater supply of technical and paramedical personnel: a survey in 1965 indicated hospitals' most urgent man power needs to be (1) Registered Nurses, (2) licensed Practical Nurses (3) Medical technologists (4) Nurse aids and orderlies, and (5) Housekeeping assistants.

Potential of the Service Industries. While any loss of resident business to other areas weakens the community's economic base, the basic industry concept points to concern for the servicing of the non-resident. This is done primarily through "tourism", a term used here to include the business traveler, those who stop here briefly en route to some other destination, the recreational tourist, and through retail trade.

The City of Tucson has numerous advantages which have made tourism of importance to the area for many years. The natural setting, a warm, semi-arid winter, and a location on a major east-west route at a point where it is intersected by an important north-south route have all contributed; these forces have not changed, and so the opportunity remains.

The city has a number of outstanding artists and galleries, but they are scattered over a ten-mile radius and even the local citizens have trouble finding some of them. They could be encouraged to locate in closer proximity. The February issue of Arizona Progress suggests that a rich Spanish heritage which Tucson wears with charm and dignity -- combined with an excellent climate, numerous scenic attractions and also modern facilities -- has provided the Old Pueblo with an expanding tourism and travel business. The airlines serving the city reported over a 10 per cent increase in passenger traffic last year, and the number of motor vehicles entering Arizona over southern routes increased by 300,000 or 13 per cent. Tourism and travel expenditures in the Tucson area amounted to about $100 million in 1965.

The merchants of Tucson have a long history of serving more than the immediate community, and in this role they have been an important part of the community's economic base. They should continue, but this in itself represents a substantial challenge. Phoenix, because of its size, offers the shopper a great diversity. Tucson must do something special to keep the non-resident shopper from driving right by. To attract tourist retail spending, Tucson will have to offer something more than is found in retail outlets throughout the nation. Superior service by a well-trained staff may be the answer. A community college can provide the training facilities to improve the service of retail outlets.

The market potential of Sonora and other parts of northwestern Mexico must not be neglected. Tucson's downtown merchants have shown an awareness of this with their promotion of bi-linual service personnel and with the free parking that they have provided for cars from Mexico.

Potential of the Mineral Industries. By far the best advances in Tucson's economy last year occurred in copper mining activity. Pima County leads the state in mineral production with an output exceeding $150 million and employment that climbed to almost 4,000 at year-end, up 12 per cent from twelve months ago. Announcements of new multi-million-dollar expansion projects were made in 1965 by four major mining companies. Copper mining employment, and copper output, should again show increases in 1966.

The expansion plans already announced for local mining operations indicate that Pima County's importance as a source of copper ore will increase in the immediate future. In addition to the active and expanding mining operations, the Tucson community is also the site of major research facilities owned by two of the nation's leading mining companies, and an even larger research installation is planned by a third. The leading copper producing mines in Pima County are:

MINE.	DISTRICT.	OPERATOR
New Cornelia	Ajo	Phelps Dodge Corporation
Mission	Pima	American Smelting & Refining
Silver Bell	Silver Bell	American Smelting & Refining
Esperanza	Pima	Duval Corporation
Daisy	Pima	Banner Mining Company
Pima	Pima	Pima Mining Company

Looking to the future, it seems that one of the most promising fields for development is in mining. The value of ore mined in Pima County in 1963 was $111,220,000. In 1964 it had risen to $148,899,000, and in 1965 it reached a total of $165 million. The average annual increase was $26,890,000. If production continued to increase at this rate, the total income by 1980 would be nearly five times the 1963 income.

Employment did not increase at the same rate as did the total value of the ore mined. The number of employees of the mining industry in June, 1963, was 3,100; in June, 1964, there were 3,200, and in June, 1965, there were 3,300. If this rate of increase in employment continues, it would mean that by 1980 there would be a 50 per cent increase in employment over 1963.

In addition, there are other developments which suggest that this figure could be doubled. Several mining companies are planning vast expansion programs. American Smelting and Refining Company will add a $1,350,000 plant for extracting molybdenum and zinc at its Mission Mine, and is spending $9,000,000 to expand copper concentrate production at its Mission Mine. The Anaconda Company plans to spend $50,000,000 and may employ 600 in five-year building plans. The Anaconda Company ordered $1,250,000 worth of earth-moving equipment to step up stripping operations at Twin Buttes from which they plan to strip 200 million tons -- the largest operation of this kind ever undertaken. Pima Mining Company expects to spend $20,000,000 to triple its production and expects to add about 110 men to its work force by the end of July, 1966.

Twenty years ago there was not a producing commercial copper mine within an airline radius of 75 miles of Tucson. Today, within a 125 mile radius of Tucson is mined about 95 per cent of all of Arizona's copper, which is more than one-half of the total United States production. Tucson has become the Copper Capital of the United States.

The future of the mining industry in the Tucson area looks promising because it is estimated that there are thirty exploration companies now working here to develop new sources of ore. Employment projections suggest that twice as many individuals will be working in the mining industry in 1980 as are employed in 1965.

Assuming that these indications materialize, it is believed that technical training offerings by a community college could be extensive. However, it is recognized that automation will have some effect on the number of employees. It is believed that the increase in employment in other fields of commerce should parallel or even exceed that of the mining industry. In any event, such an increase will be a direct result of growth of mining. A comparison shows that the average annual wage payments to covered employees between 1959 through 1964 were considerably higher than average for the mining industry (see Table 21). Of the three fields with the highest average annual wages in Arizona, mining stands highest.

TABLE 21

ARIZONA AVERAGE ANNUAL WAGE TO COVERED EMPLOYEES
AND AVERAGE ANNUAL MINING WAGE IN ARIZONA
1959-1964

Arizona Wages	1959	1960	1961	1962	1963	1964
Mining Wage	$6,070	$6,452	$6,664	$6,921	$7,147	$7,568
Average Wage	4,697	4,894	5,048	5,238	5,297	5,431

The Community Goals report has recommended that every effort should be made to find a means of supplying the area with refined copper so that a copper fabrication industry could be initiated. The Fry Report cautions agains bringing in or developing industies that might generate noxious fumes or odors or those that use large numbers of unskilled or low-paid employees. In addition, markets must be within economic reach of the manufacturing plants seeking to locate here.

Prospects for Research and Development. One of Tucson's principal exports for many years has been the highly developed human resources which have flowed from the University of Arizona, and the University will certainly continue to be one of the community's basic industries. But, as in the case of copper, the area is not making the most of the advantage of its resources because it is exporting a raw material rather than a finished or semi-finished product.

Further support of the research and development effort would be provided if the community could expand printing and publication facilities. This is one of the major fields recommended by the Fry Report. Industry similar to Kitt Peak, research, development and testing in the fields of health and medicine, electronics, water purification, astrophysics and the like would be ideal.

Projection of Manufacturing to 1980. Manufacturing showed significant improvement in 1965, although still below the level of a few years ago. At Hughes Aircraft, the receipt of missile contracts indicates a work force buildup of some 1,300 workers by mid-1966. The total number employed in manufacturing in Tucson, wages paid and the value of production, promises to expand further over the next twelve months, and there are indications that production at Hughes Aircraft may increase substantially.

Several local companies which were just getting started five to ten years ago are showing some good growth patterns. Burr-Brown Research, Inc. and Krueger Manufacturing Company, both of which employed only a few persons a few years ago, now employ 100 or more. It seems reasonable to suppose that with more opportunity to learn technical skills locally, a larger labor force of well-trained, prospective employees might attract new industry to the county.

For the total State of Arizona, the income from manufacturing has increased faster than from any other source. In 1946 the income from manufactured goods was $86,000,000. In 1954 it was $300,000,000, and in the year 1964 it was $1 billion. However, in Pima County the number of employees in manufacturing diminished from a high of 9,900 in 1963 to 6,400 in 1965. In 1963 there were 240 manufacturing establishments in Pima County with 8,283 employees and a payroll of $50,844,000, with an added value of $84,764,000 for the manufactured products.

In planning for the future, few communities are able to develop a sound economic base without some manufacturing activities. In Tucson, the development of a manufacturing base is undoubtedly the most difficult aspect of economic development; at the same time, it must be regarded as the most challenging. The Goals for the Community report and the Fry Report analyzed the physical location of the city with respect to both raw materials and markets. Both point out that present transportation technology is a serious handicap which leaves the manufacture of high-value, lightweight commodities as the only current possibility.

The Goals report suggests that Tucson's manufacturing future is brightest in the area of entirely new industries -- industries which are not just new to Tucson, but new to the entire economy. The processing of atomic waste, which includes the reclamation of many valuable resources, is certainly an industry of the future. Fry Consultants recommend that products particularily suitable to Tucson's industrial development are solid-state conductors and related devices, electronic tubes, optical instruments and lenses, and mechanical measuring and controlling instruments.

The Status of Education as a Major Industry. Expansion was also evident in other sectors of Pima County's economy. The University of Arizona is one of Tucson's important economic assets and perhaps its largest single industry. Student enrollments now exceed 23,000, up from 15,000 five years ago, and faculty and staff growth has kept pace. Expenditures in Tucson by the University, including payroll, new construction and equipment, and the dollar outlay by students for living and other expenses approximated $75,000,000 last year. This will rise to about $86,000,000 in 1966.

Education plays a major role in Arizona agriculture; it has been expanding sharply in the past decade. This growth is in response to the great demand for college-educated manpower from farms and ranches, agricultural business, industry, and services, and various private and public agencies. Increased complexities in farm and ranch operations and in industries related to agriculture necessitates technically trained personnel. The College of Agriculture of the University of Arizona, offers 213 courses in agricultural subject matter, and in cooperation with the National Association of Land-Grant Colleges and Universities and the United States Department of Agriculture, it actively participates in agricultural training programs, both academic and in-service, for international participants. Currently, seventy-six under-graduate and forty-nine graduate students representing thirty-nine countries are enrolled in academic programs in the University of Arizona's College of Agriculture.

Although some emphasis has been given to specific items in which education applies to agriculture, it is intended that this study focus attention on the importance of education in the decades ahead to further the scientific advance of our economy.

Education, in the form of a community college, will bring more students to this community, requiring more teachers and administrators with good incomes to stimulate the economic growth. Satelite businesses will follow the economic growth. As educational facilities develop and expand, we should find new and improved products being developed by research organizations which tend to cluster around college communities.

The Arizona State Board of Regents Long Range Planning Committee forecasts 153,000 students in Arizona colleges by 1975, with community, state, and private colleges enrolling 45,380 of these students. This represents an increase of 24,656 over the current small college enrollment of 20,724.

The Role of A Community College in Pima County's Future

Introduction. The State Board of Regents' has forecast a great expansion of higher education in the state by 1975, but this is a continuation of a trend that has been in effect for several years. In Table 22, which shows the rapid growth of higher education in the state in recent years, it can be seen that junior college enrollment growth exceeds that of the rapidly expanding universities. This obtains, even though the figures do not include Cochise College, the newest of the Arizona junior colleges. A continued growth in these institutions can be expected, for it is forecast that there will be a substantial increase in Arizona's high school graduates between 1965 and 1970 (see Table 23).

Enrollment of Pima County Residents in Arizona Junior Colleges. Each year a greater proportion of the growing number of Pima County high school graduates are going on to college -- 47.8 per cent in 1961 to 56.6 per cent in 1963, according to reports from the county's high schools. And, with the growth of junior colleges in the state, more of these students are attending these out-of county junior colleges, with Pima County paying their tuition.

In the first semester of 1962, Pima County had 123 students enrolled in out-of-county junior colleges, but by the first semester of 1965, the number of full-time enrollees had reached 371. In this period, the amount of tuition paid by Pima County had jumped from $22,476 in 1963-1964 to $156,244 in 1965-1966 (see Table 24). The

TABLE 22

ENROLLMENT AT INSTITUTIONS OF HIGHER LEARNING IN ARIZONA
SPRING SEMESTERS 1962 TO 1965

School	1962	1963	1964	1965
University of Arizona	16,228	18,185	19,994	21,213
Arizona State University	13,514	15,434	17,322	18,921
Arizona State College	3,073	3,560	4,012	5,071
Grand Canyon College	552	464	510	502
Maricopa County Jr. Colleges	6,133	6,781	8,633	12,855
Eastern Arizona Jr. College	500	572	603	598
Arizona Western College	--	--	752	1,042
Total	40,000	44,996	51,826	60,202

TABLE 23

ARIZONA HIGH SCHOOL GRADUATE PROJECTION
1964-65 TO 1969-70

Counties	1964-65	1965-66	1966-67	1967-68	1968-69	1969-70
Apache	224	313	340	413	415	454
Coconino	552	631	717	918	994	1,053
Gila	449	475	546	535	601	570
Greenlee	263	246	260	308	275	317
Pima	3,822	4,204	4,421	4,497	4,791	4,983
Pinal	804	856	922	1,004	1,010	1,141
Mohave	168	170	202	215	227	239
Navajo	539	647	676	742	792	881
Santa Cruz	173	185	202	240	224	254
Yavapai	477	487	616	615	603	657
Cochise*	375	401	468	506	530	559
Graham*	211	218	248	263	265	284
Maricopa*	13,232	13,437	13,988	14,529	15,282	16,071
Yuma*	735	759	794	854	933	937
Total	22,024	23,029	24,400	25,439	26,942	28,400

Source: Arizona State Board of Directors for Junior Colleges, Marvin C. Knudson.

*** Counties with junior colleges.**

TABLE 24

OUT-OF-COUNTY JUNIOR COLLEGE TUITION PAID BY PIMA COUNTY 1962-63 TO 1965-66

School Year	College	Number of Students*		Semester Tuition	Paid By Pima Co.
		1st Semester	2nd Semester		
1962-1963	Eastern Arizona	123 + (3)	99 + (2)	$100	$ 22,476
	Total	123 + (3)	99 + (2)		22,476
1963-1964	Eastern Arizona	112	100 + (1)	100	21,294
	Maricopa County	13 + (4)	19 + (2)	160	5,900
	Arizona Western	19	17	160	5,760
	Total	144 + (4)	136 + (3)		32,954
1964-1965	Eastern Arizona	101	94	200	39,000
	Maricopa County	20 + (9)	26 + (5)	200	8,556
	Arizona Western	67	53	200	24,000
	Cochise College	26	18	200	8,800
	Total	214 + (9)	191 + (5)		80,356
1965-1966	Eastern Arizona	144 + (1)	125	225	60,696
	Maricopa County	27 + (17)	41 + (12)	150	13,603
	Arizona Western	117	94 + (2)	225	47,745
	Cochise College	83	69	225	34,200
	Total	371 + (18)	329 + (14)		156,244

Source: Pima County School Superintendent.

* Part time students indicated by parentheses, all others are full time students.

budget request of the Arizona State Board for Junior Colleges projects an even greater growth, for it estimates that in the 1966-1967 school year, 563 Pima County students will be enrolled in Arizona junior colleges, with a cost to the county of $236,930.

Comparative figures for the last school year in which they were available (1964-1965) show that Pima County pays far more for tuition in existing junior colleges than does any other county in the state (see Table 25).

TABLE 25

JUNIOR COLLEGE TUITION PAID BY COUNTIES
FOR OUT-OF-DISTRICT STUDENTS
1964-1965

County	Arizona Western	Cochise College	Eastern Arizona	Maricopa County	Total
Apache	$ 1,800	$ -	$ 6,800	$ 3,620	$ 12,220
Cochise	-	-	-	-	-
Coconino	1,000	400	2,600	1,280	5,280
Gila	800	1,200	17,502	2,396	21,898
Graham	-	-	-	-	-
Greenlee	900	900	42,750	600	45,150
Maricopa	-	-	-	-	-
Mohave	1,400	-	800	200	2,400
Navajo	3,400	400	9,200	5,077	18,077
Pima	24,000	8,800	39,000	8,673	80,473
Pinal	6,950	3,800	11,600	6,342	28,692
Santa Cruz	1,200	1,400	1,400	480	4,480
Yavapai	1,400	600	7,200	2,401	11,601
Yuma	-	-	-	-	-
Totals	$42,850	$17,500	$138,852	$31,069	$230,271

Source: Arizona State Board of Directors for Junior Colleges, Marvin C. Knudson, Executive Director. February 15, 1966.

Some Needs That Might be Met by a Junior College in Pima County. In addition to the increase of numbers, there is an ever increasing demand for more education. An example of this is seen in the constant upgrading of the professional and educational level of the Tucson Police Department. By 1970, it is anticipated that the minimum requirement will be two years of college, and by 1975 it is planned that this will be extended to a baccalaureate degree.

A junior college program available in Pima County would provide a close working relationship with the department to provide courses which meet the complex, rapidly changing challenges of the law enforcement personnel with academic training which should lead to further education and a degree in a four-year college or university.

During the second semester 1966-67 there were 171 members of the police department enrolled in an especially designed college program through the Continuing Education program of the University of Arizona. Individual enrollees paid the full cost of their advanced training. It is not considered likely that the city budget will be able to subsidize the advanced college training, so the lower cost of courses in the junior college would be an advantage to the individual department members.

Also one of the important functions of the junior college is providing education for the sub-professional and semi-professional personnel to supplement the professionals graduated by the universities. It would be extremely important, then, for the junior college to be cognizant of the professional persons being graduated by the universities who, in turn, would develop the need for the semi-professionals and technicians.

The junior college could well take into consideration the industries recommended for future growth in Tucson and the fields in which the University of Arizona is developing professionals. The supply of professionals is indicated by the graduates in the principal major fields at the University and the graduates seeking employment, as shown in the Appendix.

Proposed Objectives for a Community College in Pima County. The Sub-Committee studying community background and characteristics was asked to make a careful study of what should be the objectives of a community junior college. The purpose of this task was to determine what writers and experts in the field of two year college education had to say about the matter. Secondly it was thought advantageous for this committee to make known its findings to all members of the total citizens' survey group.

To accomplish these purposes, the Sub-Committee examined various books and materials on the topic. In addition, Dr. James Snyder, Vice President of the Maricopa County Junior College system, was invited to give a presentation on the matter. From their investigation and study of those objectives thought to be appropriate, the Sub-Committee synthesized their findings and proposed that the objectives of a future community college should include the following:

1. To provide general education for all full-time students.

2. To provide two-year university-parallel programs for students who plan to transfer to a four-year college.

3. To provide vocational-technical and semi-professional programs based on a continual survey of community employment needs and career choices of graduates of Pima County high schools.

4. To provide continuing educational opportunities for those persons capable of profiting from training and study beyond high school.

5. To provide a personalized atmosphere in which the student receives guidance toward the realization of his potential.

6. To provide other services: cultural, sports and recreational programs to fulfill the community college's role.

Summary and Conclusions

From data presented in the chapter, the following summary and conclusions seem warranted.

Population Growth of Pima County.

1. Pima County grew at a steady rate from 1870 (5,716) to 1940 (72,838), with mining as the most important industry, although towards the close of this period, agriculture and the tourist trade were gaining strength.
2. From 1940 to 1960 the growth of the county was greatly accelerated, and between 1950 and 1960, the county's principal city, Tucson, led the nation with a 368 per cent increase in population, growing from the 261st largest city in the nation in 1950 to 54th by 1964. In 1965, the county had a population of 340,000 and 324,000 of these were in the Tucson Urban Area.
3. In-migration, which has in recent years exceeded out-migration by two to one is responsible for much of this growth, the average annual migration into the county of 1,413 in the 1930-1940 decade rising to 8,049 in 1950-1960.

Labor Force and Employment.

4. There is resemblance between the age and sex distribution of Pima County labor force and that of the nation, but their industrial composition differs. Pima County has many more in service industries and far fewer in manufacturing. Government, mining, tourism, manufacturing, and agriculture are the basic industries, but since 1962 both manufacturing and tourism have declined in importance.

5. Government, the leading industry in the county, receives part of its prominence in that almost 9 per cent of metropolitan Tucson consists of the families of the military personnel and civilian employees of Davis Monthan Air Force Base.

Education.

6. Education contributes greatly to the size of government. The number of students in the county's public schools had increased from 13,850 in 1940 to 72,437 in 1965, and this has meant many school bond proposals in the past ten years. Although there have been some reversals (notably in Tucson School District Number 1 in 1964), the overall record is good, several districts never being turned down in their requests, and one district (Amphitheater), authorized to bond far in excess of current need and bonding capacity.

7. The rapidly growing University of Arizona, located in Tucson, is important to the county in many ways. In 1964-1965 it received more than $9 million in support of its research activities, and in its twelve colleges which enrolled 21,103 in 1964-1965, it employed a faculty of 2,115.

8. Seventeen private vocational-technical schools in Pima County enrolled approximately 1,100 students in January, 1966. Occupational training is also available in high schools, apprenticeship programs, and the American Institute of Banking program.

9. Parochial schools number eighteen elementary and three high schools. There are a number of private schools and specialized training institutions.

The Future of Pima County.

10. Projections indicate that Pima County will continue to grow from the present population of 340,000 to 780,000 by 1980, with a corresponding 50 per cent increase in high school enrollments.

11. Tucson's geographical location makes it a potential distribution center for Mexican trade. A more important asset, however, is its climate. Climate is responsible for the growing tourist trade, and both the Goals for the Community Study and the Committee for Economic Development stress the importance of climate in the potential expansion of the health and medical industry.

12. Mineral wealth is the region's other great asset, and mineral industries are planning expansion in research as well as in mining operations. If mining continues at its present rate of increase, the value of the ore mined in 1980 will be nearly five times that of 1963. Currently, within a radius of 125 miles from Tucson is mined more than half the copper in the United States,

and it has been recommended that a copper fabricating industry could be developed in Pima County.

13. Despite the handicap of present transportation technology, there is yet potential in Tucson for the development of entirely new industries manufacturing high-value, light-weight commodities. It is likely that these products could be the outgrowth of expanding research activities in optics, electronics, astrophysics, and health and medicine.

14. Education is important to Tucson's economy, and will increase in importance as it contributes to general and individual advancement, particularly in the sciences. A community college located in the county would be an important stimulus to economic growth.

The Role of a Community College in Pima County's Future.

15. In recent years the growth of enrollment in junior colleges in the state has exceeded that of the rapidly growing universities. Pima County pays far more out-of-state tuition to existing community colleges than any other county. It is anticipated that in 1966-1967, Pima County will send to these institutions more than four times as many students as in 1962-1963, and that the tuition cost to the county for that school year will be $236,930.

16. Projections of the continued growth of Pima County's population and the increasing demand for higher education seem to indicate the need for establishing a community college. Service industries could benefit by the opportunity for employee upgrading in a community college, and expansion of the health and medical industry would be aided by programs at the community college level for training technical and paramedical personnel. The projections of expanded research programs centered around the University of Arizona could be served by community college training of technicians and semi-professional workers. The indicated expansion of the mineral industry would be aided by community college trained technicians and new industry might be attracted to the county with more local opportunities for learning technical skills. Support is therefore given to the reiterated statement of the Goals for the Community report that a need for a community college in Pima County exists now.

CHAPTER II

A STUDY OF HIGH SCHOOL SENIORS

Introduction. One important part of assessing the post-high school educational needs of a community is a study of the plans, aspirations, interests, and abilities of youth. Previous studies have indicated that plans of high school seniors are predictors of post graduation actions with a validity sufficient to warrant careful attention. Many of the same influences and forces which affect the formulation of plans tend to be those which operate to influence their implementation and determine the extent to which a senior is likely to follow them. It is important to ascertain the extent to which an area contemplating a post-high school educational program contains youth who can probably profit from various types of advanced educational and training programs designed particularly for their wants and needs.

It is significant to identify obstacles which may be associated with post-high school non-attendance and lack of motivation of talented youth to pursue higher levels of education. Assuming the characteristics of seniors in 1965-1966 are similar to those who will be succeeding them during the several consecutive years ahead, certain conclusions based upon a study of them can serve as a basis upon which to offer predictions for the future. To this matter, this portion of the report is directed.

During the spring semester 1966, questionnaires developed for the purpose were modified in final form by the Citizens Survey Sub-Committee on Youth Needs in cooperation with local high school counselors and principals. Using standardized procedures, they were administered to all seniors of public and private high schools of Pima County. To eliminate as much bias as possible from responses, seniors were told only that the study was to obtain information for improving educational opportunities, and no reference was made to its being part of a community college survey. Questionnaire responses obtained from 3,404 seniors were coded for machine data processing and were subsequently analyzed by use of a computer. Following are the results of this study relative to assessing post-high school educational needs. These data are supplemented by those from other sources appearing in other chapters of the report.

__Mobility and Nature of Student Population__. For further educational planning in the Pima County area, it is important to determine whether the prospective student body is composed of persons who have been in the community for some length of time or whether population changes rapidly due to constant migration. Some idea of this may be obtained by examining the length of time the present seniors have resided in the area served by the respective high schools. These data appear in Table 26.

TABLE 26

LENGTH OF TIME HOME HAS BEEN IN AREA
SERVED BY HIGH SCHOOLS

Time of Residence	Per Cent by Sex		
	Boys	Girls	Both
Less than a year	4	6	5
1-2 years	7	6	7
3-5 years	17	16	17
6-10 years	21	22	21
Over 10 years	48	49	49
Do not live in Pima County	1	1	1

Findings reveal that 86 per cent of the seniors have lived in the area at least three years, and about seven of every ten have been there at least six years or since junior high school. Nearly half have lived in the area over ten years, while only about one in every ten has lived there less than three years. While the data do not reflect out-migration of youth from the area, they indicate that of youth currently in school, most have been in Pima County a considerable period of time. These findings evince a relatively high degree of stability in population.

Respondents included 1,538 boys and 1,755 girls. Twenty-five per cent were found to be living with someone other than both their parents while attending school. Nineteen per cent were definitely from homes broken by death, separation, or divorce. This is an unusually high proportion of high school senior youth from homes that are broken. The incidence of family instability is greater than for some other parts of the country and higher than the national average. The majority of youth are deemed to live within easy commuting distance of a location in the County near where most of the population is to be found.

Two-thirds of the boys and 43 per cent of the girls were found to work on a part-time job during the winter while attending school. Fifty-five per cent of the seniors worked part time. Based upon characteristics of the senior classes studied, an advanced educational program should give about equal emphasis to the needs of both sexes.

Educational Intentions of Seniors Enrolled, Spring, 1966. All seniors were asked if their future plans included going to college somewhere. Data summarizing the responses are presented in Table 27 which gives the number and per cent of boys and girls with each of the several educational intentions. For example, it can be seen that while 106 or 7 per cent of the boys definitely do not include college attendance in future plans, 58 or an additional 4 per cent feel plans will "probably" not include college. The rest of the table is to be interpreted likewise. One can observe that 61 per cent of the boys and 59 per cent of the girls indicate that future plans would "definitely" include college, while 17 per cent of all seniors indicated future plans would "probably" include college attendance. Slightly higher proportions of the boys than girls expect that future plans will include college, and conversely slightly higher proportions of girls than boys do not expect to attend college. In summary, about 9 per cent of all seniors definitely do not expect to attend college, about 60 per cent definitely

TABLE 27

SENIORS' PLANS FOR COLLEGE ATTENDANCE

Plan About College Attendance	Boys		Girls		Both	
	Number	Per cent	Number	Per cent	Number	Per cent
No	106	7	212	12	319	9
Probably Not	58	4	109	6	169	5
Sub Total	164	11	321	18	488	14
Yes	932	61	1030	59	2046	60
Probably So	307	20	241	14	565	17
Sub Total	1239	81	1271	73	2611	77
Don't know	125	8	157	9	287	8
No Response	8		4		12	
Totals	1536	100	1753	100	3398	100

expect to attend, 17 per cent indicated they "probably" would go, and 8 per cent did not know or were undecided on the matter. Five per cent indicated future plans would "probably" not include college.

Place of Expected College Attendance. Youth with plans which definitely or probably include attending college were asked to indicate where they expected to go. These responses are analyzed in Table 28. Responses are shown as per cents of just those with plans for college in column (2). In column (3) are shown the per cents which responses were of all seniors included in the study regardless of plan for attending college. Of all seniors, 42 per cent indicate an intention to enroll in the University of Arizona. Eight per cent expected to leave the state, but the rest plan to enter a college in Arizona but out of Pima County. Of both boys and girls who had plans for college, 61 per cent expect to attend locally, 12 per cent plan to attend an out-of-state school, and the remaining 27 per cent expect to attend in Arizona but out of Pima County. Over 13 per cent of seniors with plans for college, or 311 seniors, expressed a plan to enroll in a junior college somewhere in the state. This constitutes over 9 per cent of all youth included in the study.

TABLE 28

PER CENT OF SENIORS BY PLACE OF EXPECTED COLLEGE ATTENDANCE

(1)	(2) Per cent With Plans for College			(3) Per cent of All Seniors		
College	Boys	Girls	Both	Boys	Girls	Both
Arizona State University	2	2	2	1	1	1
Arizona Western	7	3	5	5	2	3
Cochise College	5	3	4	4	2	3
Eastern Arizona	5	3	4	3	2	3
University of Arizona	58	65	61	42	41	42
Maricopa County Jr. Col.	.9	.8	.9	.6	.5	.6
Other Colleges in Ariz.	2	3	3	2	2	2
Other Outside Arizona	12	12	12	8	8	8
Northern Arizona University	9	8	9	7	5	6

An analysis of where seniors plan to attend college was made according to high school curriculum followed. This was for the purpose of determining what proportion of youth from the different curricula planned to attend the University of Arizona and other institutions. Nine per cent of the boys and 10 per cent of the girls, or 36 seniors, enrolled in the Vocational or Industrial Arts Curriculums, indicated they were going to attend the University of Arizona. Eighteen and 6 per cents of boys and girls respectively, or 56 seniors, who were enrolled in this type curriculum, plan to attend a junior college in the state. Twenty-two, or about 6 per cent, plan to go out of the state and the remainder who expect to attend college plan to enter one of the other colleges in Arizona.

Of seniors in the college preparatory curriculum, 54 and 58 per cents of boys and girls, or 1,205 seniors, expected to attend the University of Arizona, and 165 seniors, or about 8 per cent of those in that curriculum, expect to attend a junior college in Arizona. A fifth of the boys and 17 per cent of the girls in the business curriculum, or 98 seniors, expected to enroll at the University in Tucson. However, of those in this curriculum, 14 and 7 per cents respectively of boys and girls, or 69 persons, planned to enter a junior college in the state.

Youth Plans for Period Immediately After Graduation. To ascertain the future plans of youth for the immediate future and as a validity check upon responses concerning whether future plans include college attendance, all youth were asked to indicate what they would probably do the next year after high school graduation. Results are presented in Table 29, distributed according to their plans for attending college. Here one can see, among youth who plan to attend college, the proportion who intend to do so the next year, and the proportion who intend to delay college entrance to a time later than the next year after graduation. In table 29 opposite each type of post-graduation plan and under the response as to whether future plans include college attendance is given the per cent who intend to do a given thing the next year after graduation. For example, it may be observed that of boys whose future plans definitely did not include college attendance, 34 per cent expect to work on a job and 44 per cent intend to enter military service the year following graduation. The remainder of the table is to be interpreted in similar fashion.

It can be observed that 88 and 73 per cents respectively of the boys and girls indicating definite future plans for college attendance plan to enroll the year after high school graduation. Two and 4 per cents respectively plan to enter either a business college or a trade or technical school, and

TABLE 29

PLANS FOR COLLEGE DISTRIBUTED ACCORDING TO PLANS FOR NEXT YEAR AFTER GRADUATION

Plans After Graduation	Per Cent Boys					Per Cent Girls				
	No	Prob. Not	Prob. So	Yes	Don't Know	No	Prob. Not	Prob. So	Yes	Don't Know
Work on a job	34	29	16	3	34	17	23	11	2	20
Become h's wife	-	-	-	-	-	35	18	3	-	15
Military Serv.	44	55	18	4	33	1	3	1	-	1
Work at home	-	-	-	-	-	4	2	1	-	2
Attend college	2	-	47	88	4	3	2	41	73	4
Attend buss. college	-	2	1	1	1	8	17	17	3	24
Attend trade-tech.school	10	5	4	1	7	9	11	4	1	5
Attend nursing school	-	-	-	-	-	6	3	8	4	6
Don't know	2	7	6	1	14	3	4	2	-	10

4 per cent of the girls plan to enter nurses's training school. Only 7 per cent of the boys expressing definite plans for college expect to work on a job or to enter military service and thus delay their formal education.
In summary, 756 female and 818 male graduates whose future plans definitely include college attendance somewhere might be expected to enter a post-high school educational institution during the year following high school graduation.

Of the boys or girls who thought future plans would "probably" include college, 47 and 41 per cents respectively expect to attend the year following graduation. However, of this group, over 17 per cent of the girls expect to attend business college the next year after graduation, while 5 per cent of the boys expect to attend either a business college or a trade or technical school. Of the girls whose plans definitely or probably do not include college attendance, most expect to work and others intend to become housewives. Nearly a third of those whose plans "probably" do not include college expect to enroll in a business college, a trade or technical school (primarily cosmetology), or a nurse training school. Of seniors whose plans will "probably" include college, 145 boys and 99 girls planned to attend the year after graduation.

If all seniors who expect to enroll in a college, a business college, a nurse training school, or a trade or technical school were to do so during the next year after graduation, this would amount to 2,195, or 64 per cent, of all seniors continuing their schooling. Of these, 5 per cent would be in a business college, about 3 per cent in a trade or technical school, about 3 per cent in a nurse training school, and 54 per cent would be in a regular college or junior college.

In general, data regarding immediate post graduation plans of youth tend to verify the expressed intentions for including college somewhere in future plans. Ninety per cent of the boys and 81 per cent of the girls whose plans definitely include college attendance expect to matriculate the next year following high school graduation.

To be found in Table 30 are data showing plans of all youth for the year following graduation. For example, it can be seen that of all boys and girls responding, 11 and 38 per cents respectively plan to work on a job. This is a fourth of the group. Seventy per cent of all youth have plans for continuing their education in some type of post high school institution. This is about 10 per cent higher than records show have actually continued beyond high school during the last five years.

TABLE 30

PER CENT OF SENIORS BY PLANS FOR NEXT YEAR AFTER GRADUATION

Plans After Graduation	Boys	Girls*	Both
Work on a job	11	38	25
Become a housewife	-	11	6
Military service	14	1	7
Work at home	-	2	1
Attend college	63	59	59
Attend business college	1	9	5
Attend trade or technical school	3	4	3
Attend nursing school	-	5	3
Don't know	3	2	2
No response	4	2	3

* Girls could give two choices but boys only one; therefore, per cents total more than 100 per cent for girls and both boys and girls.

Curriculum Distribution by Plan for College. An analysis of educational aspirations was made according to type of curriculum in which youth were enrolled to ascertain (1) the extent to which youth who aspire to college are enrolled in curricula appropriate to that goal, and (2) the extent to which youth not planning on college are enrolled in a college preparatory curriculum. Both reveal, in part, the effectiveness of educational guidance and the extent to which youth have made realistic choices. These data are presented in Table 31.

TABLE 31

PER CENT OF SENIORS BY HIGH SCHOOL CURRICULUM ACCORDING TO PLAN FOR COLLEGE

Plans for Attending College	Number	Commercial	Col. Prep.	Voc. or Ind.Arts	Special Education	Home Econ.	Agriculture	No Resp.
BOYS								
No	106	18	16	58	.9	-	6	1
Probably not	57	19	25	54	-	2	-	-
Probably so	307	9	63	23	1	-	1	2
Yes	932	4	88	5	-	-	1	1
Don't know	125	15	26	48	4	2	2	3
GIRLS								
No	212	49	14	17	-	14	-	6
Probably not	109	48	26	12	3	6	-	6
Probably so	241	35	49	5	3	5	-	2
Yes	1030	10	84	3	-	1	-	1
Don't know	157	54	22	12	2	7	-	4

Table 31 may be read as follows. Of the 106 boys indicating that future plans definitely do not include attending college, 18 per cent were enrolled in a commericial curriculum, 58 per cent were in a vocational or industrial arts curriculum, and 16 per cent were in a college preparatory curriculum. Of the girls with similar plans, 49 per cent were in a commercial curriculum, 14 per cent in a college preparatory curriculum, and 17 per cent in a vocational or industrial arts curriculum.

Of the seniors definitely planning on college attendance, 88 and 84 per cents respectively of the boys and girls were in a college preparatory program. Just over half the boys whose plans "probably" do not include college were in some type of vocational curriculum. About half the boys who don't know whether college attendance is in future plans are enrolled in a vocational curriculum, whereas over half the girls with similar plans are in the commercial curriculum. Ten per cent of the girls and 4 per cent of the boys whose plans include college were in the commercial program. About six of every ten boys and half the girls who think their plans will "probably" include college were in the college preparatory program.

Observation of the data reveals that the largest per cent of boys whose plans do not include college were enrolled in either a vocational or commercial curriculum. Girls in this category were enrolled likewise. Fourteen per cent of the girls definitely not planning on college were in the college preparatory program, compared to 16 per cent of the boys with similar plans. In general, it appears that youth are enrolled in curricula compatible with future educational aspirations.

Another analysis was made to determine what per cent of youth enrolled in each type of curriculum had plans for college. It was found that 76 and 80 per cents of boys and girls respectively enrolled in college preparatory curriculum had plans that definitely included college attendance. Another 18 per cent of boys and 11 per cent of girls in that curriculum indicated plans would probably include college. This curriculum, however, seemed incompatible with the plans of 6 and 9 per cents of boys and girls. A third of the boys in the business curriculum and a fourth of the girls had definite plans for college attendance, and another 24 and 20 per cents of boys and girls from this curriculum indicated plans would probably include college. Forty-four per cent of the boys and 37 per cent of girls enrolled in a vocational or industrial arts curriculum indicated future plans would definitely or probably include college, with the preponderance expressing doubts about attending college.

Relationship of Grade Average to Plans for College. To determine the extent to which youth aspiring to college attendance have earned grades sufficiently high to predict success, an analysis of plans and academic rank was made. This analysis reveals also the extent to which good students may not plan on college attendance. Data are presented in Table 32 on this matter. Under a given class rank and sex column and opposite each type of plan for college attendance are given the per cents of students having earned the different grade averages. For example, one may note that of boys in the top third by class rank, 7 per cent indicated that future plans definitely did not include college and another one-half of one per cent thought plans would probably not include college attendance. In comparision, 6 per cent of girls ranking in the upper third responded likewise. It can be observed that 87 per cent of the boys in the top third by class rank felt plans would definitely include college as did 82 per cent of the girls in this rank. Nearly a fourth of the boys and a third of the girls in the lower third indicated plans would definitely not include college, while about a fourth of both boys and girls in this lower third felt plans would definitely include college. Only 3 per cent of all seniors in the top third "didn't know" whether future plans included college, compared to 18 and 20 per cents respectively of boys and girls in the lower third rank.

TABLE 32

PER CENT* OF SENIORS BY SEX, ACADEMIC RANK, AND PLANS FOR COLLEGE

Plan for College	Top Third Boys	Top Third Girls	Middle Third Boys	Middle Third Girls	Lower Third Boys	Lower Third Girls
No	.7	4	7	16	24	31
Probably Not	.5	2	5	9	6	11
Probably So	9	9	27	18	26	15
Yes	87	82	52	44	24	24
Don't Know	3	3	9	12	18	20

* Difference between total per cents and 100 per cent is attributed to non-response on one or more of the items.

These data reveal a direct relationship between rank in class and plans for college attendance. It can also be concluded that a relatively small per cent of youth in the top third of their graduating classes do not forsee plans including college. Considerably more doubt on this matter is expressed by those in the middle third as revealed by 27 and 18 per cents of the boys and girls respectively indicating plans would "probably" include college. Half the boys and 39 per cent of the girls in the lower third of their classes believed plans would definitely or probably include college as did 79 and 62 per cents of boys and girls respectively in the middle third.

Reasons for Plans Not Including College. All youth whose future plans definitely or probably did not include attending college somewhere were queried as to their reasons. An attempt was made to determine if the matter of personal or family finances was a deterring factor. Table 33 contains an analysis of the reasons cited by senior boys and girls.

Per cents are shown for all seniors and for only those whose future plans definitely or probably would not include college.

TABLE 33

PER CENT OF YOUTH WHOSE PLANS "DO NOT" OR "PROBABLY DO NOT" INCLUDE COLLEGE BY REASON

Reason	Percent of All Youth			Percent of Youth with No Plans		
	Boys	Girls	Both	Boys	Girls	Both
Tired of school; had enough education	2	2	2	13	7	10
Want to work and make money	2	5	3	11	21	17
Too expensive; can't afford it	4	5	4	21	20	20
Want to get married	.6	4	2	4	17	11
Parents don't want me to	.1	.2	.2	1	1	1
People who don't go to college get ahead just the same	.3	.3	.3	1	1	1
Waste of time	.3	.3	.3	1	1	1
Can't make good enough grades	5	4	5	28	18	22
Other - Miscellaneous	4	3	3	19	13	16

In table 33, opposite a given reason are shown the per cents of boys and girls or both who indicated it as the most important reason why future plans do not include college attendance. It can be observed, for example, that of all the boys and girls respectively, 4 and 5 per cents indicated college attendance was too expensive and they couldn't afford it. This was the reason given by a fifth of the seniors whose plans did not include college. Twenty-eight per cent of the boys and 18 per cent of the girls with no plans indicated the inability to make good enough grades as the reason for not planning on college. Seventeen per cent with no plans for college indicated that they wanted to work and earn money. A tenth of the non-college bound seniors said they were tired of school and had enough education. Seventeen per cent of the girls and 4 per cent of the boys said they wanted to get married. Only 1 per cent of the youth thought college attendance a waste of time. One can conclude that among youth whose future plans do not include college, that at least four of every ten expressed financial considerations and inability to make grades as reasons for not including college attendance in future plans.

Effect More Money Would Have on Plans. Each respondent not planning on attending college somewhere was asked if he would change his plans if he had more money. Responses are shown in Table 34, according to number and per cent of seniors indicating "Yes," "No", or "Maybe" as to whether plans would change.

TABLE 34

PER CENT OF YOUTH NOT PLANNING ON COLLEGE WHO WOULD CHANGE PLANS IF THEY HAD MORE MONEY

Would Change Plans	Boys	Girls	Both
Yes	28	24	26
No	43	47	45
Maybe	28	29	29

It can be observed that 28 and 24 per cents respectively of the boys and girls indicated that plans would definitely change if they had more money. A slightly higher percentage of girls than boys were undecided and thought "maybe" plans would change with more money. Youth indicating plans definitely would or might change with more money constitute 55 per cent of all whose plans do not include college. Those who felt that plans would change with more money constitute 13 per cent of all seniors. Since responses were anonymous, there is no way of determining how many of this group had grades that would predict success. The important thing is that at present a financial barrier appears to deny some youth an opportunity to try for success in additional types of education.

Typically, the community college is an "open door" institution which affords youth and adults the opportunity to succeed without discrimination against those who otherwise would never have a chance because of financial reasons or inability to meet admission standards of some four-year institutions, however accessible they may be. Four of every ten youth with no plans for college, including a higher proportion of girls than boys, would definitely not change their plans if they had more money. The per cent of Pima County youth whose plans do not include college and whose plans might be altered with more money coincide with similar percentages derived in other studies. Youth who indicated their plans would definitely or probably change if they had more money were asked how much they would need through scholarships, loans or other provisions. Of these, 48 per cent felt they would need enough money to pay all expenses, 46 per cent indicated they would need enough for half the expenses, and 6 per cent would need less than half.

Interest in Further Education by Graduates Whose Plans Do Not Include College. Seniors whose plans definitely or probably do not include college attendance were asked to indicate which of several types of education would have greatest interest for them. Results appear in Table 35.

TABLE 35

TYPES OF TRAINING OR EDUCATION OF GREATEST INTEREST TO YOUTH NOT PLANNING ON COLLEGE

Type of Education	Per Cent Boys	 Girls	 Both
Work for several years as a paid apprentice to learn a trade	20	14	17
Post graduate high school work in the high school at night	1	2	2
Enter military service for training	37	3	18
On-the-job training with a company or industrial firm	23	41	33
Correspondence study	1	3	2
Attend adult education classes	1	4	3
None of the above	16	33	26

It can be observed that 20 per cent of boys and 14 per cent of girls or a total of 17 per cent with no plans for college indicate interest in working several years as paid apprentices to learn a trade. Only 2 per cent of all seniors without plans for college would be interested in postgraduate work in the high school at night. A third expressed interest in on-the-job training with a company or industrial firm. Slightly over a third of the boys and 3 per cent of the girls were interested in entering military service for training. Over a fourth of all seniors with no plans for college, or 16 and 33 per cents of boys and girls respectively, expressed no interest in any of the types of education listed in Table 35. Only two per cent expressed an interest in correspondence study.

Youth without plans for college were asked about the types of advanced education in which they would have interest provided opportunity were available in Pima County. This inquiry was designed to assess the level of interest for advanced business, trade, or technical training, or for regular college work. As shown in Table 36, 58 per cent of all seniors with no plans for college attendance indicated interest in some type of advanced business, technical, or trade training if it were available in the county. Twenty-eight per cent exhibited no interest in anything that might be available and 14 per cent cited an interest in work which could be transferred to a four-year college. From these data one can conclude that while nearly two-thirds of the boys express interest in on-the-job training or military service school and about a fifth are interested in apprenticeship training, an almost negligible proportion, 1 per cent, would be interested in post-graduate work at night in their local high school. According to these responses from seniors, about six of every ten youths whose future plans do not include college attendance would be interested in some type of advanced occupationally-related education.

TABLE 36

PER CENT OF YOUTH NOT PLANNING ON COLLEGE BY TYPE OF ADVANCED EDUCATION IN WHICH INTERESTED IF AVAILABLE IN PIMA COUNTY

Type of Education	Per Cent		
	Boys	Girls	Both
Advanced technical, business or trade training	52	62	58
First two years of college work which could be transferred to a 4-yr. college or university	20	10	14
None	27	29	28

Educational Plans and Perceived Family Economic Status. Youth were asked to indicate one of several responses which they perceived as best describing their family's income. Thus, it was possible to obtain students' perceptions of their family's income status. Data in Table 37 show the analysis of their perceptions of family income level according to plans which youth have for college attendance. It can be observed that of youth who indicate their family "frequently has difficulty making ends meet", 19 and 30

TABLE 37

PLANS FOR COLLEGE AND PERCEIVED FAMILY ECONOMIC STATUS

Perceived Family Economic Status	Per Cent No or Probably Not Boys	Girls	Per Cent Yes or Probably So Boys	Girls
Frequently have difficulty making ends meet	19	30	67	56
Sometimes have difficulty getting necessities	23	31	67	58
Have necessities but not many luxuries	13	20	75	69
Comfortable but not well-to-do	8	16	84	75
Well-to-do or wealthy	7	13	87	82

per cents of boys and girls respectively do not plan on college, compared to 8 and 16 per cents of those who feel the family financial condition is comfortable but not well-to-do and 7 and 13 per cents of those whose family is thought to be well-to-do or wealthy. Of youth from families that frequently have difficulty making ends meet, 67 and 56 per cents respectively of boys and girls plan on college compared to 87 and 82 per cents respectively of those whose family is well-to-do or wealthy. Observation of Table 37 reveals that higher proportions of youth have plans for college attendance as family income level rises. Not shown, are data derived from another analysis indicating that of boys with no plans for college, 26 per cent are from homes that have difficulty "making ends meet" or in getting necessities, compared to 8 per cent from the same type of homes who definitely plan on college attendance. Twenty-four per cent of girls with no plans for college are from homes reported to have low incomes while only 9 per cent of those planning on college live in families where this level of income prevails. It is apparent that perceived family income level is directly associated with whether youth plan on college attendance.

A further analysis revealed that higher per cents of youth whose plans included college worked at a job while they were attending high school than did those whose plans did not include college. This was especially true of boys. While a third of the boys with definite plans for college reported that they had been working while they were in high school, only 22 per cent of those whose plans definitely would not include college reported working. For girls these per cents were 60 and 51 respectively.

Relationship of Plans and Stability of Home Life. Opportunities which youth have and their plans for the future may be related to the stability of home and family life. In a community where a high proportion of homes are broken by death, separation, or divorce, it is not likely one would find youth receiving the encouragement or opportunity to continue their education beyond high school that would be true of a community where family life was more stable, everything else being equal.

An analysis was made to determine if there was any difference in educational plans of youth associated with whether their home was broken. When boys from broken and unbroken homes were studied according to those with definite plans for college, it was found that 57 per cent of the former and 62 per cent of the latter had definite plans for college. From unbroken homes, 62 per cent of the girls have plans that definitely include college compared to 55 per cent of the girls from broken homes. Whereas 13 per cent of the girls and 9 per cent of the boys from broken homes did not include college in their future plans, this was true of 6 and 11 per cents respectively of those from unbroken homes. One can conclude that there is in this area a relationship between youths' educational plans and stability of family life as reflected in broken or unbroken home situations.

Perceived Parental Attitudes and Youth Educational Intentions. Previous studies have shown a relationship to exist between attitudes which youth perceive their parents to have about post-high school education and their own plans or intentions. Perceived parental attitudes, insofar as they are valid reflections of parents' true attitudes, also reveal indirectly the strength of moral support which is likely to exist in a community concerning programs of education beyond the high school. Data from this analysis are shown in Table 38.

One can observe that 92 per cent of the seniors perceive that their parents either insist they attend college or want them to attend after graduation. This per cent compares to 89, 84, 82, and 80 per cents in four other locales recently studied. Relatively, perceived parental attitude is more inclined to favor college attendance in Pima County than in some of the other areas studied. These findings suggest differences among different geographical sections in extent to which home influences may operate to encourage post-high school attendance of youth. Only 7 per cent of youth felt their parents were indifferent or negative about the

TABLE 38

YOUTH PERCEPTION OF PARENTAL ATTITUDE ABOUT COLLEGE ATTENDANCE

Parents' Attitude	Per Cent		
	Boys	Girls	Both
Insist I go	46	34	41
Want me to if I want to	46	55	51
Indifferent	6	8	6
Don't want me to go	1	2	1

matter. Little difference seems to exist in attitudes of parents as perceived by each sex; however, larger per cents of boys than girls report parents insisting on college.

Attitude and desire of parents toward continued education for their children seems to be associated with educational plans which youth express. The perceptions which a high school student has of how his parents feel about his attending college may influence his own attitude and plans for future training. To ascertain the extent to which these relationships are true of the Pima County area, an analysis was made, and the data are presented in Table 39. Under each type

TABLE 39

PER CENT OF SENIORS BY PLAN FOR COLLEGE AND PERCEIVED PARENTAL ATTITUDE TOWARD COLLEGE ATTENDANCE

Perceived Parental Attitude	Plans for College: No		Probably Not		Probably So		Yes		Don't Know	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
Insist on or expect me to go	8	4	9	3	32	20	62	51	14	7
Want me to go if I want to	62	64	67	73	61	71	35	45	67	75
Indifferent	27	25	21	18	5	6	1	3	14	13
Don't want me to go	1	5	2	6	-	2	-	-	3	4

of educational intention are given the per cents of boys and girls according to the attitude which they perceived. For example, it may be observed that of the boy seniors whose plans definitely do not include college, 8 per cent believe their parents insist they attend college, 62 per cent believe parents want them to attend, and 27 per cent believe their parents are indifferent or negative. This is in contrast to 62 per cent of the boys with definite plans for college who perceive parents as insisting on college attendance, 35 per cent who want them to go if they want to, and 1 per cent who are thought as being indifferent about the matter.

Further observation and examination of the data reveal that higher per cents of youth whose plans will definitely or probably include college indicate their parents insist they go than youth whose plans either definitely or probably do not include college. Also striking is the relatively larger per cents of parents perceived as indifferent by youth not planning on college compared to those who are. About seven of every ten youth who "don't know" whether future plans include college indicate their parents want them to attend. One can conclude from these data that in the Pima County area, parental expectations seem relatively high for their children, and the intention or plan of youth in regard to attending is directly associated with attitudes youth believe parents to possess.

Relationship of Educational Plans and Educational Level of Parents and School Attendance by Relatives. To determine the extent to which the plans of youth are related to the educational levels attained by parents, an analysis was made of their educational intentions and highest level of education attained by parents. These data appear in Table 40. In columns under youth plans for college are shown the per cents of parents for boys and girls separately who had different levels of educational attainment. It can be observed, for example, that the mothers of 20 and 23 per cents of boys and girls respectively whose future plans definitely or probably do not include college had an education of 8th grade or less, whereas only 8 per cent of youth whose plans definitely or probably include college had mothers with that level of education. The rest of the table is to be interpreted likewise. Observation reveals that higher proportions of youth with plans for college were from homes where parents had higher levels of education than were those whose future plans did not include college. For example, 36 and 30 per cents respectively of mothers and fathers of boys not planning on college attendance had less than a high school education in comparison with 21 and 23 per cents respectively of mothers and fathers of boys

TABLE 40

SENIORS' EDUCATIONAL PLANS AND LEVEL OF PARENTS' EDUCATION

Highest Level of Education	No or Prob. Not				Yes or Prob. So				Don't Know			
	Mother		Father		Mother		Father		Mother		Father	
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls
8th Grade or less	20	23	22	27	8	8	13	10	25	41	37	41
Some high school	16	22	8	20	13	12	10	11	22	46	18	30
High school graduate	36	32	26	20	37	33	25	24	44	36	18	44
Business or trade sch.	2	6	-	7	7	10	6	6	4	10	8	9
Some college	4	6	11	7	13	16	15	16	11	5	12	10
College grad.	7	4	8	7	17	17	23	25	4	6	10	7
Don't know	11	4	8	9	3	2	3	5	12	8	11	14
None	1	-	-	-	-	-	-	-	3	2	3	1

whose future plans include college attendance. Parents of nearly four of every ten seniors planning on college had some college education compared to parents of slightly more than one in every ten youth whose own plans do not include college.

When an analysis is made to determine what proportions of youth have plans for college according to level of parental education, a direct relationship is found between parents' education level and per cent of youth whose own plans include college attendance. This is illustrated by the fact that of parents who had no more than an eighth grade education, 68 and 50 per cents of the mothers and fathers respectively had boys whose plans included college attendance compared to 92 and 91 per cents respectively of mothers and fathers who were college graduates. Whereas, of parents who were college graduates, 4 and 6 per cents had boys whose future plans did not include college, 15 and 34 per cents respectively of mothers and fathers with only an eighth grade education had boys whose plans did not include college. The same type of relationship exists between educational level of girls' parents and their own educational intentions.

It is more likely that youth belonging in a family where relatives have completed higher levels of education will themselves aspire to education beyond the high school in greater numbers. Such an association reflects traditional family socio-cultural background and its influence on youth aspirations. Extent to which relatives, namely brothers and/or sisters, aunt or uncle and/or cousins, or a combination of these, have attended college was analyzed according to youth plans for college. Between the two groups of youth, those with plans for college and those without, there was a difference in per cent of seniors whose brothers and/or sisters, or aunts, uncles and/or cousins had attended college. Of boys definitely planning on college, 38 per cent were found to be from families where a brother or sister had attended college, and 69 per cent indicated an aunt, uncle, or cousin had attended college. Of boys definitely not planning on college, 13 per cent reported a brother or sister had attended, while 45 per cent reported an aunt, uncle, or cousin had attended. Data for girls showed the same relationship between plans and extent to which relatives had attended college. A fourth of the boys and a fifth of the girls with no plans for college indicated no relatives other than parents had attended college, compared to 6 and 8 per cents of girls and boys respectively whose plans definitely included college. College attendance was more extensive among relatives of youth whose plans included college.

Long Range Future Occupational Plans of Youth. Occupational aspirations of youth give clues to types of training beyond high school which would be required if they are to achieve their occupational goals. All seniors were asked to name their first preference for the kind of job which they would like to look forward to having ten years from now. Table 41 contains the per cent distribution of youth by sex according to occupational aspiration. Opposite each occupational field is given the per cent of seniors aspiring to it. For example, one may observe that of all boys, 41 per cent indicated an interest in one of the professions as did 31 per cent of the girls. This was a total of 36 per cent of all seniors, or 1,229 seniors. Eighteen per cent of the girls want to enter office-clerical-secretarial types of work. There were 336 seniors interested in this type of work. Seven per cent, or 126 girls, indicated an interest in becoming nurses, and 14 per cent were interested in being housewives. The occupations of nursing, business, the professions, and homemaking were of interest to seven of every ten girl seniors.

Three per cent, or 107 seniors, expressed interest in some form of business or commercial art. Nine per cent of the boys were interested in drafting or the building trades, mechanics, or machine shop. Sixty-six, or 4 per cent were interested in electricity or electronics. At least 61

TABLE 41

OCCUPATIONAL ASPIRATIONS OF YOUTH

Occupational Aspiration	Boys	Girls	Boys and Girls	
	Per Cent	Per Cent	Per cent	Number
Professional (other than nursing)	41	31	36	1229
Nursing	-	7	4	126
Military Service	4	-	2	64
Government Service	2	1	2	61
Office-Clerical-Secretarial	2	18	10	336
Housewife	-	14	7	242
Electricity or Electronics	4	-	2	66
Selling-Salesman-Waitress	-	-	-	13
Drafting or Building Trades	3	-	1	43
Mechanics or Machine Shop	6	-	3	99
Agricultural and Related	5	-	2	83
Factory Foreman or Worker	1	-	-	14
Airline Pilot or Hostess	2	3	3	86
Art (Interior decorating, commercial Art, etc.)	3	4	3	107
Run own Business	1	-	.7	24
Lab technical (dental, medical, chemical)	1	-	1	32
Police & Law Enforcement	3	-	1	43
Beautician or Barber	-	4	2	69
Religious worker	.8	.6	.7	26
Entertainer	1	1	1	42
Miscellaneous	5	4	4	142
Business Mgt., Banking, etc.	5	2	3	103
Don't Know	5	2	3	117
No Response	7	4	5	179

per cent of all seniors aspire to enter occupations for which advanced training or education beyond high school would be essential or desirable, exclusive of those wanting to work in the fields of electricity, electronics, mechanics or machine shop, drafting, selling or building trades. Eighty-three boys indicated their long-range preference for some type of agricultural related occupation. One hundred forty-two students indicated a preference for some uncommon occupation such as deep sea diving, etc., and all such varieties of occupation were placed in the miscellaneous category, along with those which did not seem to fit one of the categories listed. Five per cent of all seniors, or 179 individuals, did not respond to the question and another three per cent, or 117 individuals, indicated they did not know what they would prefer to do.

An analysis of occupational aspirations and educational intentions was completed to discover the extent to which youth aspiring to occupations for which post-high school training would be either desirable or essential plan to enter post-high school educational or training programs. These data are presented in Table 42. Viewing Table 42, it can be seen that of the seniors who definitely do not include college in future plans, four per cent of the boys and two per cent of the girls aspire to enter one of the professions other than nursing. Likewise it can be seen that 55 and 54 per cents respectively of boys and girls with definite plans for college plan to enter one of the professions. It appears that a relatively small per cent of youth whose plans do not include college have unrealistic aspirations about entering a profession. Nearly a third of the girls without plans for college expect to enter office-clerical-secretarial types of work as do a fourth of those whose plans will "probably" include college. In general, educational plans seem compatible with occupational aspirations.

Field of Interest for Advanced Study. Seniors planning on attending college or taking advanced technical, business, or trade training after graduation from high school were asked to indicate the field of greatest interest in which they would like to study. This information shows the extent to which immediate interests for type of advanced study coincide with long range occupational goals. In Table 43 are presented the numbers and per cents of seniors indicating each of several fields of interest. It may be observed, for example, that 22 per cent, or 755 seniors, expressed interest in liberal arts while 4 per cent, or 145 seniors, wanted to study engineering. Although a small number were interested in retailing and accounting, it can be determined that 479, or nearly 14 per cent of all seniors were interested in some type of advanced business education, with the

TABLE 42

RESPONDENTS BY PLAN FOR COLLEGE
ACCORDING TO OCCUPATIONAL ASPIRATIONS

Occupational Aspiration	Per Cent								Total Number
	No		Prob. Not		Prob. So		Yes		
	Boys	Girls	Boys	Girls	Boys	Girls	Boys	Girls	Boys & Girls
Professional (other than nursing)	4	2	7	2	26	19	55	47	1229
Nursing	1	6	-	2	-	11	-	7	126
Military Service	15	-	5	-	4	-	2	-	64
Government Service	1	-	2	-	3	-	2	2	61
Office-Clerical-Secretarial	-	30	-	32	3	25	1	9	336
Housewife	-	31	-	26	-	13	-	9	242
Electricity or Electronics	5	-	14	1	6	-	2	-	66
Selling-Salesman-Waitress	1	1	2	-	-	-	-	-	13
Drafting or Building Trades	8	-	5	-	3	-	1	-	43
Mechanics or Machine Shop	16	-	31	1	9	-	2	-	99
Agriculture and Related	6	-	9	1	6	-	4	-	83
Factory Foreman or Worker	2	-	-	-	1	-	-	-	14
Airline Pilot or Hostess	1	2	-	5	4	5	2	3	86
Art	3	1	-	3	4	6	3	4	107
Run Own Business	1	-	2	-	1	-	1	-	24
Lab Technician	-	1	2	1	-	-	-	2	32
Police and Law Enforcement	2	-	3	-	4	-	2	-	43
Beautician or Barber	2	11	-	10	-	2	-	1	69
Religious Worker	-	-	-	1	-	-	1	1	26
Entertainer	1	1	-	-	2	-	1	2	42
Miscellaneous	14	2	7	4	6	4	3	4	142
Business Mgt., Banking, etc.	1	1	-	3	5	2	6	1	103
Don't Know	4	2	7	3	6	2	4	2	117
No Response	12	6	5	6	7	5	6	3	179

TABLE 43

FIELD OF INTEREST FOR ADVANCED STUDY BY PER CENT

Field of Interest for Study	Total		Plan for College by Per Cent			
			Yes		Probably So	
	Number	Per cent*	Boys	Girls	Boys	Girls
Music, Art, Drama	177	5	5	7	5	8
Liberal Arts	755	22	28	33	14	15
Engineering	145	4	12	-	7	-
Business Admin.	101	3	6	2	3	2
Teaching	237	7	3	16	2	6
Medicine & Dentistry	141	4	8	4	3	2
Nursing	99	3	-	6	-	8
Accounting	41	1	2	-	1	2
General Business	140	4	2	4	3	9
Secretarial	164	5	-	4	-	16
Home Economics	58	2	-	4	-	4
Skilled Mach. Trades	62	2	1	-	6	-
Agriculture	81	2	4	-	5	-
Electronics Tech.	70	2	3	-	7	1
Mechanical Technology	56	2	2	-	6	-
Beautician or Barbering	57	2	3	-	13	2
Architecture	46	1	2	-	2	-
Don't know	47	1	2	-	2	-
Miscellaneous	79	2	2	2	4	2
No Response	650	19	13	11	15	16
Law Enforcement	41	1	2	-	5	-

*Per cents based on total number of all seniors and not just those planning on advanced education. Less than 1 per cent were interested in each of the following: Airline Pilot or Stewardess, Retailing, Mortuary Science, Drafting and Design, Building Trades, Metallurgical Technology, Laboratory Technology. One per cent were interested in each of Accounting, Law Enforcement or Architecture. Others were not planning on furthur education or did not know what field they were interested in studying.

prevailing interest interest in secretarial science, business administration, and general business. Three per cent, or 99 seniors, expressed interest in studying nursing, while 144 others were interested in some type of medical education. Seven per cent, or 237 seniors, expressed interest in teaching. Two per cent, or 70 seniors, expressed interest in studying electronics technology. Five per cent, or 177, were interested in studying music, art, or drama. Two per cent each were interested in home economics, skilled machine trades, agriculture, mechanical technology, and cosmetology and barbering.

Shown in Table 43 also are the per cents of seniors with definite or probable plans for college attendance who would be interested in the several types of advanced education or training. Twenty-eight per cent of boys and a third of the girls whose plans definitely include college expressed interest in liberal arts as did about 16 per cent of those whose plans will probably include college. Twelve per cent of the boys with definite plans want to study engineering. Sixteen per cent of the girls with definite plans wish to study teacher education. Five per cent of the boys with definite plans want to study music, art, or drama, while 8 per cent are interested in medical training. Six per cent of boys with definite plans are interested in business administration, and about five per cent of all seniors whose plans will probably include college are interested in general business.

Students' Perceptions of Occupational and Educational Guidance Help Received from High School. Attitudes of high school youth toward continuing their training, confidence in the future, and support for a good educational system in the community may possibly be in part determined by the extent to which, as students, they perceive they have received the necessary help desired. A successful community college program is largely dependent upon effective occupational and educational counseling at the high school. In an attempt to reveal how seniors evaluate the amount of help received in deciding what occupations to enter or in formulating educational plans beyond high school, an analysis was made according to sex to determine if there are any apparent sex differences in evaluations by youth. These data are presented in Table 44. Also presented are evaluations by seniors in the college preparatory curriculum, the

TABLE 44

YOUTH PERCEPTIONS ABOUT AMOUNT OF HELP RECEIVED IN OCCUPATIONAL OR EDUCATIONAL PLANNING

Amount of Help	Per Cent			By Selected Curriculums					
				Coll. Prep.		Business		Vocat'l or I.A.	
	Boys	Girls	Total	Boys	Girls	Boys	Girls	Boys	Girls
A lot; all I need	14	15	15	16	15	10	18	14	14
Considerable; could have used more	24	25	25	27	28	23	36	23	21
Some but not very much	32	31	32	30	32	29	25	34	34
Little or none	28	27	28	25	24	37	21	28	31
No Response	1	-	-	1	1	1	-	1	-

the vocational or industrial arts curriculum, and the business curriculum. These data will reveal if differences in opinions on school effectiveness are related to the program pursued.

From Table 44, one may discern that 14 per cent of the boys felt the school had given them lots or all the help they needed, while 24 per cent indicated they had received considerable help but more could have been used. Twenty-eight per cent of the boys and 27 per cent of the girls felt they had received "little or no" help, while about a third of the boys and girls felt they had received some but not very much help from the school. Slightly higher percentages of girls felt the school had given them more help than was true of boys, but the differences are minor. When all seniors are considered, 60 per cent felt the school had given them little or no help or some but not very much help in deciding upon what occupation to enter or in making educational plans for the future. Seniors nearing graduation are but a short way from being the future adult population. Observation of youth perceptions about the amount of help received in deciding what occupation to enter or in making educational plans for after graduation reveals differences among students enrolled in the college preparatory, business, and voactional curriculums which seem minor. For all practical purposes, evaluations are about the same, regardless of curriculum. However, attention is directed to the comparatively larger per cent of boys in the business curriculum who indicate the amount of occupational and educational guidance was "little or none."

An analysis was made of how well seniors felt the high school was preparing them for what they planned to do after high school graduation, and these data appear in Table 45. Twenty-eight per cent of the boys and 24 per cent of the girls felt their high schools had either not prepared them very well for what they planned to do after graduation or that preparation was fair but all could be better. About half of both sexes felt high school had been very good in some ways but could be better in others in preparing them for life's activities after graduation. A slightly higher per cent of the girls felt the high school had given them just what they needed than did boys.

Observation of evaluations as to how well the school was preparing seniors for what they planned to do after graduation, according to the curriculum followed, reveals some differences of note. Nearly half the boys, or 48 per cent, in business curriculums indicated the school was doing only

TABLE 45

YOUTH PERCEPTIONS OF HOW WELL HIGH SCHOOL IS PREPARING FOR PLANNED FUTURE ACTIVITIES

How well School is Preparing in terms of Post Graduation Plans	Per Cent			By Selected Curriculums					
				Coll. Prep.		Business		Vqc'l or I.A.	
	Boys	Girls	Total	Boys	Girls	Boys	Girls	Boys	Girls
Not very well	11	8	9	18	11	23	8	8	7
Fair, but all could be better	17	16	16	24	20	25	14	13	15
Very good in some ways; could be better in others	50	52	51	36	40	40	49	55	56
Giving just what I need	21	24	23	21	29	9	28	23	21
No Response	1	1	1	1	-	3	1	1	1

a "fair" or "not very well". This was the case for 42 per cent of the boys in college preparatory curriculums and 21 per cent of those in vocational or industrial arts curriculums. Between seven or eight of every ten seniors felt, in terms of how well the school was preparing them for what they planned to do after graduation, that the high school was not giving them all they needed.

An analysis was made to determine if youth with plans for college had different perceptions than did youth whose future plans did not include college about the occupational and educational guidance received and the extent to which the school was preparing them for what they intended to do later. No observable difference appeared to exist in evaluations by student's plan. The youth who planned on college had no different evaluation of his high school than one who did not plan on college.

Seniors' Evaluations of Way Selected Services and Facilities Have Helped Them. Seniors were asked to indicate the way certain selected school services and/or facilities had helped them. These findings appear in Table 46 by sex and for the total group. One may observe that of the boys, 27, 39, and 31 per cents respectively felt that the provision of someone in whom they could confide about school problems was "good," "fair," and "poor." For the total group, nearly three of every ten seniors felt this provision had been "good," about four of every ten thought it was "fair," and three of each ten thought

TABLE 46

YOUTH EVALUATION OF HOW SCHOOL SERVICES OR FACILITIES HELPED THEM

Service or Facility	Per Cent* Boys Good	Per Cent* Boys Fair	Per Cent* Boys Poor	Per Cent* Girls Good	Per Cent* Girls Fair	Per Cent* Girls Poor	Per Cent* Total Good	Per Cent* Total Fair	Per Cent* Total Poor
Someone I can confide in about school problems	27	39	31	27	36	34	28	37	33
Library Materials on vocations	39	44	14	40	46	12	39	45	13
Offering many courses from which to choose	46	38	12	44	42	11	44	40	12
Information on going to college	51	36	9	53	35	8	52	35	8
Social activities	35	41	17	36	43	14	37	41	15
Someone I can confide in about personal problems	13	25	55	16	23	57	15	24	55

* When per cents in each successive set of three columns do not sum to 100 per cent, the difference is due to non-response.

it had been "poor." Under each of the nine columns and opposite each type of service or facility is underscored the largest per cent appearing in each set of evaluations. This has been done to facilitate interpretation for the reader. For example, it may be easily observed that the largest per cent, or about four of every ten youth, indicated that the provision by the school of someone in whom they could confide about school problems was "fair" in the way this service had helped them. Likewise, one can observe that 55 per cent of youth indicated that the provision of someone in whom they could confide about personal problems was "poor" in the way this service had helped them. Information on going to college and the offering of many courses from which to choose were evaluated as "good" by the largest group. Excepting the "poor" rating given on the provision of someone to confide in about personal problems, all other services and facilities were evaluated as "fair" by the largest group of respondents.

Evaluations of counseling services were found to vary from school to school in the extent to which there was someone present in whom students could confide about personal problems. To illustrate this variation data are presented in Table 47 by school on this one matter.

TABLE 47

SENIORS' EVALUATIONS BY SCHOOL OF PROVISION FOR COUNSELING ABOUT PERSONAL PROBLEMS

	Per Cent	Boys	Per Cent	Girls
School *	Good	Poor	Good	Poor
1	9	59	9	60
2	15	51	14	52
3	8	61	8	75
4	15	47	14	44
5	45	33	4	52
6	16	46	24	44
7	7	68	8	68
8	17	45	21	38
9	12	59	14	62
10	11	57	16	60
11	50	29	43	28

*Only the schools having the largest enrollments are shown here; the other four smaller ones were not included in this table as they have been in all others.

One can observe that in school "1," 9 per cent of boys and girls indicated the provision of personal counseling services was "good" while 59 and 60 per cents of boys and girls rated it "poor." Similar evaluations were made by boys and girls from a given school, except for school "5." Here it appears that personal counseling services are definitely geared to boys. One might follow a clue like this and investigate the effectiveness of such services for girls in that school in seeking to improve them. The reader may note also that evaluations of "good" by boys varied from 7 to 50 per cent among the schools and from 29 to 68 per cent on the evaluation of "poor." Similar variations were found among evaluations of girls from the several schools.

In the same way, boys' evaluations of counseling services about school problems varied from school to school. Evaluations of "poor" ranged from 12 per cent in one school to 46 per cent in another. Girls' evaluations of this service ranged from 7 to 50 per cent indicating "poor" from the different schools. Based upon these opinions of seniors, the quality of counseling services about youths' school and personal problems apparently varies considerably among the secondard schools.

Not shown here are data from an analysis made to determine if there was a difference in the way seniors with different levels of academic achievement evaluated the selected services and facilities. It was found that higher per cents of both boys and girls ranking in the top third of the class than those ranking in the lowest third evaluated services and facilities as "good," except for the item concerning the availability of someone to confide in about personal problems, in which a larger per cent from the bottom third rated the provisions as "good" than did students from the top third. In general, larger per cents of seniors in the bottom than in the top third evaluated services and facilities as "poor," except in regard to provisions for counseling about personal problems. Larger per cents of both boys and girls in the top third evaluated this provision as "poor" than did those in the bottom third. In general, student evaluations on the way certain high school services and facilities had helped them were directly related to their level of academic achievement. However, in the case of counseling on personal problems, the higher the level of student achievement, the larger the per cent who evaluated the service as less effective.

Summary and Conclusions. Data presented in this chapter seem to warrant the following summary statements and conclusions:

1. The facts that 86 per cent of the seniors had lived in the area three years and that seven of every ten had been in Pima County since junior high school, indicate a relatively high degree of population stability.

2. An unusually high per cent of seniors were found to be from broken homes.

3. Just over two-thirds of the boys and 3 per cent of the girls were found to work part time while attending high school. Higher per cents of working youth had plans for attending college than those who were not working.

4. Sixty per cent of seniors indicated future plans would include college attendance, and 17 per cent more felt future plans would "probably" include college.

5. Of seniors with plans for college, 61 per cent indicated they expect to attend the University of Arizona, 13 per cent plan to enroll in a junior college in Arizona, 14 per cent expect to enroll in another state institution, and 12 per cent expect to go outside the state.

6. About 56 per cent of all high school seniors completing college preparatory curriculum, planned to enroll at the University of Arizona. The largest per cents of seniors by curriculum expecting to attend a junior college, were completing a business or vocational or industrial arts curriculum.

7. Youth plans for the year after graduation seemed to coincide with expressed educational plans. Of boys and girls with definite plans for college, 90 and 81 per cents respectively expect to enroll the following year. In general, girls whose plans do not include college, expect to work and get married, and boys in the same category plan to work or enter military service. Few youth with definite plans for college expect to delay entrance.

8. Although 77 per cent of seniors thought future plans would definitely or probably include college, 64 per cent expressed intent to continue their schooling in a regular college, business college, trade or technical school, or nurses' trainign the year after graduation.

9. Youth appeared to be enrolled in high school curriculums compatible with future educational aspirations, with most of those planning on college being in a college preparatory curriculum and most of those not planning in college being in another type. Only about 15 per cent of youth with definitely no plans for attending college were in a college preparatory curriculum; of all seniors in the college preparatory curriculum, about 8 per cent did not plan to attend college.

10. Analysis of class rank and plans for college revealed that most youth in the top third had plans which would include college. It also revealed that possibly a higher per cent of the middle and lower

thirds expect to attend college than is realistic in terms of their reported schoolastic achievement. It would seem that some of the middle third, and perhaps more of the lower third could profit by the availability of post high school educational programs other than the traditional type of regular college work. Programs of general education and occupational education designed to terminate in two years or less might more appropriately serve the needs of these persons than do the type of college program currently available in Pima County.

11. Nearly four of every ten youth with no plans for college attendance, cited the desire to work and make money as the most important reason for their not going on to college, or indicated that college was too expensive and they could not afford it. Some of the 15 per cent of seniors in the top third class rank who had no plans for college were in this group. Inability to make grades was the reason given by most seniors with no plans for college.

12. About one fourth of the seniors with no plans for college attendance indicated plans would definitely change if more money were available, and another 29 per cent thought plans "might" change. (This group constitutes 13 per cent of all seniors.) About half felt they would need enough money to pay all expenses, 46 per cent would need half their expenses, and 6 per cent would need less than half.

13. A third of the graduates with no plans for college expressed interest in on-the-job training with a firm, 17 per cent said they would like to apprentice for a trade, and 18 per cent were interested in military service training. About a fourth of seniors with no plans for college would not be interested in any type of further education.

14. Perceived family economic status, stability of home life, perceived parents' attitudes about going to college, level of parents' educational attainment as reported by seniors, and extent to which relatives other than parents had attended college, were all found to be directly and positively related to whether seniors' future plans included college attendance.

15. Fields of interest for further study expressed by seniors coincide rather closely with expressed long range occupational aspirations.

16. From expressed fields of interest for advanced study and long range occupational aspirations, it would seem that post high school curriculums would be needed in laboratory technology, nursing, business education with emphasis upon office-clerical-secretarial and business management types of programs, pre-professional, liberal and fine arts, agriculture related, electronics technology, mechanical technology, law enforcement, cosmetology, and trade training (possibly apprenticeship).

17. Sixty per cent of all seniors felt that their high school had given them little or no help, or some but not very much help in deciding upon what occupation they should enter or in formulating educational plans; 77 per cent felt the high school had given them less than what they need in terms of preparing them for what they planned to do after graduation. The majority of all seniors evaluated the presence of someone in school they could confide in about personal problems as "poor." Whether the service is poor or not is another question, but at least six out of every ten graduating seniors think it is "poor," and this is the attitude with which these seniors are leaving school to become citizens and taxpayers.

18. Considerable variation existed among the schools in terms of evaluations which seniors gave of the matters enumerated in item 17 above. Clues indicated some high schools might profitably study the effectiveness of their guidance services.

CHAPTER III

A STUDY OF RECENT HIGH SCHOOL GRADUATES

In assessing the educational needs of an area for post-high school programs, studies of school attendance patterns and data which graduates can provide are significant. Assuming the graduates of previous years in an area are similar to those who will follow for a few years, considerable confidence can be placed upon this source of information. Patterns of occupational and educational pursuits, residential distribution, characteristics, and interests are not likely to vary markedly with future groups of graduates, barring a major political or economic change, except in a relatively slow fashion.

Recent Patterns of School Attendance Beyond High School. School officials in each of the private and public schools and school districts of Pima County were asked to indicate the number of high school graduates for each of the years 1961 to 1965 who had requested a transcript sent to at least one post-high school institution. It is not known how many actually might have enrolled or been accepted into a college, university, or other type of school. However, without an actual follow-up to determine this, such information is the best available evidence on patterns of post-high school attendance. This information was not available in two small non-public schools, but in the period covered, these two schools accounted for no more than one-half of one per cent of the total number of high school graduates in the county.

From these data, which are presented in Table 48, it can be determined that for schools reporting information for the years 1961-1965 inclusive, 54 per cent of the graduates requested transcripts forwarded to at least one college or university, and that approximately another 6 per cent of graduates attended other types of post-secondary schools, with a five year average of 60 per cent of Pima County graduates seeking further education. In the table, it can be seen that greater proportions of students in private schools seek further education, and that in all schools between 1961 and 1965 there was a regular increase of the proportion of graduates seeking higher education.

TABLE 48

POST SECONDARY EDUCATION OF HIGH SCHOOL GRADUATES IN PIMA COUNTY 1961 - 1965

	Year	Total Grads.	Attended College		Attended other Post-Secon Schls		Total to College or Tech. Schools	
			Number	%	Number	%	Number	%
	1961	2,397	1,138	47.5	148	6.2	1,286	53.7
PUBLIC	1962	2,536	1,263	49.8	174	6.9	1,437	56.7
	1963	2,588	1,335	51.6	182	7.0	1,517	58.6
SCHOOLS	1964	3,276	1,821	55.6	193	5.9	2,014	61.5
	1965	3,764	2,081	55.3	203	5.4	2,284	60.7
	1961	243	123	50.6	24	9.9	147	60.5
PRIVATE	1962	267	158	59.2	26	9.7	184	68.9
	1963	288	197	68.4	28	9.7	225	78.2
SCHOOLS	1964	337	226	67.1	15	4.5	241	71.5
	1965	365	257	70.4	19	5.2	276	75.6
	1961	2,640	1,261	47.8	172	6.5	1,433	54.3
ALL	1962	2,803	1,421	50.7	206	7.1	1,621	57.8
	1963	2,876	1,532	53.3	210	7.3	1,742	60.6
SCHOOLS	1964	3,613	2,047	56.7	208	5.8	2,255	62.4
	1965	4,129	2,338	56.6	222	5.4	2,560	62.0
Five-Yr Total		16,061	8,599	53.5	1,018	6.3	9,611	59.8

Method of Studying Graduates. Lists of high school graduates were obtained from all public and non-public high schools in Pima County for the years 1961 and 1963. Names were alphabetized by sex and year for each high school, and a random sample statified by year, sex, and school was selected for contact by questionnaire. These questionnaires were prepared in final form by members of the Citizens Survey Sub-Committee on Youth Needs who were advised by high school administrators.

During the fall of 1965, 1,576 questionnaires were mailed to graduates with a cover letter and an enclosed stamped and addressed return envelope. The principals' offices of the high schools acted as the return collection agencies for the study. Several weeks following the initial mailing, a second questionnaire and letter were forwarded to those who had not responded to the first invitation for assistance and co-operation. Three hundred sixty envelopes were returned for lack of sufficient address. Responses were received from about 65 per cent of those graduates whose addresses were apparently satisfactory. The return represented a 14.4 per cent random sampling of all seniors graduating in 1961 and 1963. An analysis of non-responses revealed that they were in general evenly distributed by sex, year, and district. There is little reason to suspect any bias in responses related to these factors. However, the reports of high school principals on post-high school attendance during the two years 1961 and 1963 indicate that about 57 per cent of all graduates continued their education. Of the graduates responding to the questionnaire, 77 per cent had attended a college or university, a business college, or a trade or technical school. The response to this study appears to be biased in favor of graduates who continued their education. Seventy-seven per cent, however, is the same as the percentage of 1966 seniors whose future plans were found to definitely or probably include further education, and the bias towards graduates with further education may be reduced due to the fact that many graduates may have delayed further education one or more years after their high school graduation.

Marital and Residential Status of Graduates. Of all graduates responding to the study, 67 per cent lived in Pima County, 3 per cent lived outside but in an immediately adjacent county, 4 per cent lived elsewhere in Arizona, and 26 per cent lived outside Arizona. With about two-thirds of the graduates becoming residents of the county, one might expect attitudes developed about the high schools they attended to be heavily reflected in the adult population. Of the one-third of the respondents who had left the county, 38 per cent did so in less than a year following graduation from high school, and 43 per cent did so after one year and less than three years. A somewhat higher per cent of boys than girls left within less than a year. On the other hand, more of the girls left after a year and in less than three years.

About 36 per cent of the responding graduates were married: 26 per cent of the men and 46 per cent of the women. Three per cent were divorced or separated. Approximately 71 per cent of the men and 50 per cent of the women respondents had never been married. Five per cent were married within six months following graduation, and 15 per cent were married in less than two years. Higher percentages of women than men graduates marry sooner, 13 per cent of the women marrying within a year after graduation, compared to 3 per cent of the men.

Economics and Occupational Status of Graduates. Of all respondents, 43 per cent were employed full time, 20 per cent part time, and 36 per cent were unemployed. More men than women were employed full or part time on a paying job.

Among those who have continued to reside in Pima County, 38 per cent are employed full time and 31 per cent part time, as compared to the 47 per cent full-time and 23 per cent part-time employment reported by all male respondents. The employment of women graduates still in Pima County closely corresponds to the 39 per cent full-time and 17 per cent part-time employment of all women respondents.

Ninety-one per cent of the men who had no post-high school education are employed full time, as are 39 per cent of the women who had no further schooling. While none of these men report part-time employment, 5 per cent of the women do. Nine per cent and 56 per cent respectively of these men and women with no further schooling report that they are not employed.

Of the high school graduates who went to college, 35 per cent of both men and women report current full-time employment, with 29 per cent of the men and 24 per cent of the women indicating part-time employment. The comparatively low proportion of employed persons obtains because many of these 1961 and 1963 graduates are still in college, and attendance at the University of Arizona probably accounts for the high proportion of Pima County male graduates who have part-time jobs.

The relationship of employment status to the respondent's current educational endeavor is presented in Table 49. Here it can be observed that of full-time students, 8 per cent of the men and none of the women are employed full time, while 43 per cent of the men and 42 per cent of the women who are full-time students are also employed in part-time jobs. Ninety-two per cent of part-time male students and 62 per cent of part-time women students are full-time employees. These findings point to the desire of employed graduates to get more education, and to the economic need of many students.

Analysis of the reasons for unemployment show that 5 per cent of the men and 2 per cent of the women who are unemployed say that they have tried, but have not been successful in getting a job. Another 2 per cent of unemployed men and unemployed women cite lack of qualifications as the reason for their unemployment.

TABLE 49

CURRENT EMPLOYMENT STATUS RELATED TO CURRENT ENROLLMENT IN POST HIGH SCHOOL EDUCATION BY PER CENT

	Men			Women		
Employment	Full Time Student	Part-Time Student	Not Enrolled	Full Time Student	Part-Time Student	Not Enrolled
Full time	8	92	86	-	62	55
Part-time	43	6	1	42	10	5
Not Employed	49	3	9	56	28	39

In reporting weekly salaries, 10 per cent of all respondents indicated earning less than $50, 24 per cent reported between $50 and $100, 11 per cent reported $100 to $135, and 5 per cent said their weekly income was over $135.

A much higher per cent of men who had no post high school education reported full-time employment than did men who had gone to college; consequently a larger per cent of men with no further education reported higher earnings. But even after the responses had been equated, men with no further education reported higher incomes, 27 per cent of them reporting salaries in excess of $135 weekly, and 36 per cent reporting $100 to $135 weekly. The smaller earnings of men who had gone to college is probably due to the fact that many were in school and reported their part-time incomes.

Among women, the responses to the question of salary were more evenly distributed, with 49 per cent of those with no further education responding, compared to a 39 per cent response of women who had gone to college following high school. A comparison of per cent responses of all women should therefore be favorable to those with no further schooling, yet 14 per cent of women who had gone to college report earnings in excess of $100 weekly while only 5 per cent of women with no education after high school do so. Conversely, 15 per cent of women with no further education earned less than $50 weekly, while only 6 per cent of women who had gone from high school to college were in this category.

School Attendance and Interests in Further Education. Of all responding graduates, 3 per cent of the boys and 10 per cent of the girls, or 7 per cent of the total, reported having no training or schooling beyond high school. Twenty-six and 32 per cents respectively of the men and women graduates, or a total of 29 per cent had received on-the-job training at the place where they were employed. One per cent of the boys and 7 per cent of the girls had attended business college, while 5 per cent of the boys and 8 per cent of the girls had attended a trade or technical school. Of the respondents, 66 per cent had attended a college or university. This included 72 per cent of the men respondents and 60 per cent of the women. Four per cent had taken advantage of an adult education course at a local high school and 7 per cent of the men and 3 per cent of the women had taken a correspondence course. Twenty per cent of the men and less than one per cent of the responding women graduates had attended a military service school. There was no significant difference between the responses of the total group and those who had continued to live in Pima County, with the expected exception that twice as large a percentage of the former had attended military service schools.

Of the respondents, 49 per cent of the men and 29 per cent of the women were currently attending college full time. In addition, 10 per cent of the men and 8 per cent of the women were attending on a part-time basis, while 39 and 59 per cents respectively of men and women were not in attendance at the time of the study. Of the men and women respondents living in Pima County, 57 and 34 per cents respectively were attending school full time. This compares with 44 and 45 per cents respectively of men and women graduates living elsewhere in Arizona other than in adjacent counties. Of those in adjacent counties, 33 per cent of the men and 20 per cent of the women were in school full time. Of graduates living out of the state, only 30 and 14 per cents respectively were in full time school attendance. While 10 per cent of the men in Pima County were attending a school part time, 17 per cent living in an adjacent county were doing so. Higher per cents of men than women respondents are continuing their schooling on a part-time basis.

Of all graduates responding, 34 per cent were attending the University of Arizona, 2 per cent were in Northern Arizona University, one per cent at Eastern Arizona Junior College, and less than one per cent were enrolled in Arizona State University, Arizona Western College, Cochise College, or in Maricopa County Junior College. Again, less than one per cent were in other Arizona colleges, while 6 per cent were enrolled out of the state in another college or university.

Among those whose residence was still in Pima County, 64 per cent of the men and 36 per cent of the women indicated they were currently attending the University of Arizona. One per cent of the graduates still living in Arizona were attending college out of state. One per cent of women residents were in Northern Arizona University, and less than one per cent of the men were attending each of three junior colleges: Arizona Western, Maricopa County, and Eastern Arizona.

However, 17 per cent of the male graduates living in an adjacent county were attending the junior college in adjacent Cochise County, and 20 per cent of the men and 5 per cent of the women who had moved to a county in Arizona beyond counties adjacent to Pima County were attending Eastern Arizona Junior College, while 30 and 35 per cents respectively of men and women graduates in this category were attending the University of Northern Arizona. Although there is no way of telling into which county the students have moved, it would appear that those moving into junior college counties had taken advantage of the educational opportunities offered there, even though two and four years had lapsed between their high school graduation and the school year in which they were enrolled in junior colleges.

Of all respondents, seven of every ten indicated they were interested in opportunities for further education or training. Present interest was expressed by 76 and 64 per cents respectively of the men and women responding.

As many as 82 per cent of the men with no post high school education expressed interest in additional training, as did 51 per cent of the women graduates with no further education. Graduates who had attended college responded positively to this question with 73 per cent of the men and 68 per cent of the women indicating an interest in opportunity for further education. Many graduates are interested in opportunities for further training whether they are currently enrolled or not.

An analysis of current enrollment showed that 72 and 61 per cents respectively of men and women who are full-time students expressed interest in opportunities for further education, as did 79 and 63 per cents respectively of the men and women not enrolled. Even higher were the 83 and 86 per cents respectively of men and women graduates enrolled as part-time students who expressed interest in opportunities for more education or training.

Various reasons were given by respondents for not attending school at the time of the inquiry. These are shown in Table 50 by per cent of response to each reason. Of the graduates not currently enrolled in school, 17 per cent of the men and 9 per cent of the women cited financial reasons as being most important. Eight per cent of the men and 17 per cent of the women indicated they had already completed the school they attended following graduation. Fourteen per cent of the men and 39 per cent of the women said family responsibilities were most important, and another 2 per cent of the men and 8 per cent of the women indicated a lack of time. Military service was the reason indicated by 28 per cent of the male graduates who were not currently enrolled in school. Two per cent of the men and 3 per cent of the women said there was no opportunity available within the community. Five and 2 per cents respectively of men and women indicated difficulty of making grades as the reason, and 6 and 5 per cents cited their failure to take college preparatory subjects.

TABLE 50

REASONS WHY GRADUATES WERE NOT IN SCHOOL

Reason	Per Cent of Graduates Not Attending	
	Men	Women
Do not have time	2	8
Opportunity not available in the community	2	3
Financial reasons	17	9
Not interested	5	9
Already completed school attended	8	17
Too difficult to make grades	5	2
Did not take college preparatory course	6	5
In military service	28	-
Family responsibilities	14	39

Only 22 and 39 per cents of the men and women students who had gone to college following high school responded to the question of why they were not currently enrolled, and this perhaps indicates that many of these students were still in college two and a half and four and a half years after graduation. Four per cent of the men and 13 per cent of the women who were not currently enrolled indicated that they had finished their post high school education, and another 7 per cent of the men said they were in military service. Some indication of the causes for drop outs may be gained by a comparison of the following percentages: 1 and 3 per cents respectively of these men and women indicated lack of time, 2 per cent of the men and 12 per cent of the women cited family responsibilities, 1 and 5 per cents respectively said that they were not interested, and 2 and 1 per cents indicated difficulty with grades. One per cent of both men and women pointed to lack of opportunity within the community, while 4 and 3 per cents of these men and women cited financial reasons.

Reasons for not currently attending school were also analyzed for those who received no further education. Slightly over half the women indicated family responsibilities, as did 18 per cent of the men. Nine per cent of the men and 7 per cent of the women gave lack of interest as the reason. Eighteen per cent of the men and 5 per cent of the women said that the most important reason was their failure to take college preparatory courses. A tenth of the women indicated they either did not have time or that opportunity was not available where they lived, but none of the men listed this as being the most important reason. Twelve per cent of the women and 45 per cent of the men with no education beyond high school said that financial reasons were the greatest obstacle to their further education.

Significant is the finding of the further analysis that, of the graduates who did not attend school following graduation, 73 per cent of the men and 42 per cent of the women indicated they would have continued in school provided more financial assistance had been available at the time of high school graduation.

Of the graduates presently living in Pima County 74 and 60 per cents of the men and women expressed present interest in opportunity for further training or education. Eighty-three and 73 per cents of men and women living in adjacent counties, and 60 and 84 per cents of those living elsewhere in the state were interested in additional opportunity for education, as were 80 and 70 per cents respectively of those residing outside Arizona.

Twelve per cent of the graduates in Pima County expressed interest in a community college and 8 per cent in a technical school. Assuming the same proportion of all graduates for the past five years to be interested in further educational opportunity as those in the random sample who responded, there would be approximately 11,300 graduates living in Pima County with interest in further educational opportunity. Research evidence on the education of adults indicates that validity of high school grades as predictors of success in post-high school programs decreases as length of time out of school increases. Although not all these graduates would be motivated to attend or would be successful if they did, there is no good way of determining the proportions that would be in either category. Studies in performance of adults and veterans indicate that reference to previous high school grades of those expressing interest would be of little help in ascertaining what success this group would have were they able to enter educational programs that are compatible with their interests and felt needs.

Factors Related to Current Interest in Education. Analyses presented in the previous chapter on seniors' educational plans revealed a relationship between them and perceived parental attitude toward their continuing in school after high school graduation. Higher proportions of youth who believed their parents insisted or wanted them to continue their education had plans for further education than those who believed their parents were either indifferent or negative concerning the matter. A similar analysis has been made for graduates, and data appear in Table 51.

TABLE 51

PERCEIVED PARENTAL ATTITUDE AND EDUCATION
BEYOND HIGH SCHOOL BY PER CENT

Parental Attitude about College Attendance	All Graduates			No Additional Schooling		Attended College	
	Men	Women	Both	Men	Women	Men	Women
Insisted I go	20	12	16	0	2	25	19
Wanted me to go if I wanted to	61	63	62	36	34	66	73
Indifferent	2	6	4	18	10	2	3
Did not want me to go	0	1	*	0	2	0	*
Wanted me to go but couldn't afford it	8	7	7	36	15	3	3
Other	1	3	2	0	10	1	2

*Less than one per cent. Failure of columns to total 100 per cent is due to no response.

In the second column of Table 51 are shown the per cent of all respondents by attitude which they believed their parents to have about their continuing in college. Twenty per cent of the boys believed their parents insisted that they attend college compared to only 12 per cent of the girls. In general, the fact that 78 per cent of youth believed their parents insisted or wanted them to attend college reveals a fairly "positive" community attitude about college attendance. The influence of perceived parental attitude may be revealed more clearly in the third and fourth columns which contain data for graduates with no further education of any type compared to those who have actually attended a college or university. It can be observed that among those who attended college, 25 per cent of the men and 19 per cent of the women felt their parents insisted they go, while among those with no further schooling, only 2 per cent of the women and none of the men perceived their parents as insisting. Just as revealing is the fact that while only 2 and 3 per cents of those having attended college perceived their parents as indifferent, 19 and 10 per cents of those without further education indicated their parents were indifferent.

Once again, the financial factor for not going on to college is prominent, with 36 per cent of the men and 15 per cent of the women who had no training beyond high school perceiving that their parents wanted them to continue their education, but couldn't afford it.

From these data one can conclude that (1) there seems to be only a slight parental bias favoring the education of men more than women; and (2) that higher percentages of graduates who entered a college or university perceived that their parents insisted or wanted them to continue school than is true of graduates who have had no further education. Further, it appears that a relationship may exist between indifferent and negative parental attitudes and graduates having received no further education, but that financial reasons for their children play an even more important part in non-attendance, particularly in the perception of male graduates.

Possible Influence of Available Opportunity on Plans. An attempt was made to determine how the accessibility of local educational opportunity might have influenced graduates' plans. Each respondent was asked how the availability of two years of college work or some type of technical or semi-professional vocational training in the region at the time of graduation might have affected his plans. In Table 52, it is shown that 39 per cent of the men and women indicated they would not have been interested in this sort of education, while a fourth of the men and women would definitely have taken advantage of the opportunity. Of the men, an additional 22 per cent might have planned to stay home and take advantage of such opportunity, as would 18 per cent of the women.

Of the graduates who received no type of further education or training after high school graduation, 64 per cent of the men and 34 per cent of the women stated that they would definitely have taken advantage of the opportunity if two years of college work or some type of technical or semi-professional educational training had been available in the region when

TABLE 52

EFFECTS ON PLANS OF GRADUATES IF TWO YEARS OF COLLEGE WORK OR TECHNICAL TRAINING HAD BEEN AVAILABLE BY PER CENT

Effect on Plans	All Graduates			No Additional Schooling		Attended College	
	Men	Women	Both	Men	Women	Men	Women
Would not have been interested	36	40	39	18	41	41	47
Might have taken advantage of it	22	18	20	9	20	17	11
Would definitely have taken advantage of opportunity	24	27	27	64	34	21	21

Failure of columns to total 100 per cent is due to non-response.

they graduated. In addition, 9 and 20 per cents respectively of the men and women who had no further education indicate they might have planned to take advantage of such opportunities had they been available. Eighteen per cent of the men and 41 per cent of the women felt they would not have been interested.

The same type of analysis was made to determine whether those who did attend a college or university would have been influenced by the availability of two years of college or some type of technical, semi-professional or vocational training. Twenty-one per cent of the men and women indicated they would definitely have taken advantage of such an opportunity. Seventeen and 11 per cents respectively of men and women thought they might have planned to stay home and take advantage of such an opportunity. About 41 per cent of the men and 47 per cent of the women continuing their education in a college or university would not have been interested.

When analysis was made by current enrollment, 15 per cent of the men and 11 per cent of the women who were full time students said they definitely would have taken advantage of the opportunity if two years of post high school education had been available in the community, and an additional 13 and 9 per cents of these men and women said they might have taken advantage of it. Fifty-eight per cent of men enrolled as part-time students indicated that they would have been interested in such local opportunities.

with 25 per cent saying they definitely would have taken advantage of it, and 33 per cent indicating that they might have done so. Among part-time women students, 21 per cent said they would definitely, and another 14 per cent said they might have, taken advantage of the opportunity.

Analysis was also made of the interest in two years of post high school training according to curriculum studies. Forty-two per cent of both men and women enrolled in the vocational curriculum indicated they would definitely have taken advantage of such opportunity had it been available in the community, while another 33 and 17 per cents respectively of these men and women said they might have done so. Twenty-eight per cent of the men and 41 per cent of the women who had taken business courses indicated they would definitely, and 42 and 27 per cents of these men and women said they might, have taken advantage of the opportunity. Of women who had studied home economics, 21 per cent indicated they definitely, and a like proportion indicated they might, have taken advantage of the opportunity. Of those who had taken college preparatory courses, 18 and 15 per cents of men and women respectively indicated they would have or might have taken the opportunity to attend such an institution.

If the same proportion of all graduates for the past five years would definitely have taken advantage of local post high school opportunity as indicated by respondents, 4,300 youth would have been in attendance. An additional 3,200 persons might have taken advantage of such an opportunity. This would have represented 47 per cent of all graduates for that period, including some who have had no further education as well as some of those who have gone to a college or university. To the extent that the responses of graduates are valid indications of what one might expect to happen, it can be concluded that almost five out of every ten graduates would be interested.

All graduates were asked to indicate in which type of school they would have had an interest if the opportunity had been available. These data are presented in Table 53, where it is shown that 12 per cent specified a community college, 22 per cent, a four-year college or university, 9 per cent, a trade or vocational school, and 29 per cent, a college of their choice.

A further analysis of the responses to this question by those with no schooling beyond high school and by those who attended college is also shown in Table 53. Eighteen and 17 per cent of both men and women who had no additional schooling said that they would have been interested in attending a community college, as compared to 11 per cent

TABLE 53

TYPE OF INSTITUTION GRADUATES WOULD HAVE ATTENDED
HAD OPPORTUNITY BEEN AVAILABLE
BY PER CENT

Type of Institution	All Graduates			No Additional Schooling		Attended College	
	Men	Women	Both	Men	Women	Men	Women
Community College located in the County	13	11	12	18	17	11	4
Four-year College or University	25	20	22	45	24	21	18
Trade or Vocational School	7	12	9	9	34	2	2
College of own Choice	29	28	29	0	7	34	41
None	1	4	2	9	7	1	0

Failure of columns to total 100 per cent is due to non-response.

and 4 per cent respectively of the men and women who had attended college. While only 2 per cent of the men and women who had attended college indicated they might have been interested in a trade or vocational school, 9 per cent of the men and as many as 34 per cent of the women who had received no training since high school indicated an interest in this kind of education.

Analysis of responses according to high school curricula indicated that 23 and 25 per cents respectively of men and women who had taken vocational courses would have attended a local community college while 20 and 33 per cents of these men and women would have attended a trade or vocational school had there been the opportunity to do so. Thirty-one and 23 per cents respectively of men and women who had taken a business course would have attended a community college and 14 and 24 per cents of these men and women would have attended trade or vocational schools. Fourteen per cent of women who had studied home economics indicated that they would have attended a community college, with another 24 per cent indicating attendance at a trade or vocational school had there been opportunity to do so. Only 2 and 3 per cents of men and women who had taken college preparatory courses expressed interest in trade or vocational schools, but 8 and 5 per cents respectively of these men and women indicated that they would have attended a community college had the opportunity been available locally.

In general, responses to these questions follow the same pattern as did responses to the question of the effect on students' plans had two years of college or technical training been available, with those who had no further schooling expressing the greater interest in the kinds of programs typically offered in a community college.

The discrepancy between the 27 per cent of all students who said that they definitely would have taken advantage of two years of college or technical education had it been available (see Table 52) and the total of 21 per cent who indicated that they would have attended a community college or a vocational school can be explained by the fact that responses to the latter question assume "an opportunity" (which would include adequate finances among other things) to attend the sort of institution they most desire. Responses to the former question perhaps reflect a more realistic appraisal of what they might actually have done had a community college been available in the region.

Graduates were asked to tell what they thought about the availability of opportunities which youth have in their former high school districts for receiving training or education after high school graduation. While 37 per cent felt it was adequate for all who desire more school, 45 per cent indicated that even though there was a fair amount of opportunity, not all youth who desire more training find what they want available, and 15 per cent felt the availability of opportunity was poor.

Responses to this question by graduates who had no post high school education and by those who attended a college or university are shown in Table 54. Here it can be seen that of men and women graduates who had no further education, 37 and 27 per cents respectively felt that local educational opportunities were adequate, compared to 43 and 39 per cents of men and women who had attended a college or university. Conversely, slightly higher percentages of those with no further education felt that local opportunities were poor. About seven out of every ten women with no additional schooling thought local opportunities are poor, or fair -- not all who desire more training finding what they want. The largest percentage of these women with no post-high school training indicated that if they had been given the opportunity for further education, their first interest would have been in attending a trade or vocational school (see Table 53). This suggests that the opportunity for post-high school vocational training for women is one of the salient educational needs in Pima County.

TABLE 54

AVAILABILITY OF POST-HIGH SCHOOL EDUCATIONAL OPPORTUNITIES AND TYPE OF FURTHER EDUCATION

Availability of Opportunity	Per Cent By Type Of Further Education			
	No Additional Schooling		Attended College	
	Men	Women	Men	Women
Adequate for all who desire more school	37	27	43	39
Fair amount of opportunity; not all youth who desire more training find what they want available	36	59	42	46
Poor opportunities; local youth should have more opportunities	9	10	14	12

Failure of columns to total 100 per cent is due to non-response.

Further analysis reveals that graduates who are currently enrolled as full time students perceive local opportunities for post high school education to be better than do part time students or those not enrolled. Nevertheless, 51 and 65 per cents of these male and female full-time students think local opportunities are poor or fair, with not all finding what they want. Thirty-three per cent of the male part-time students said that local opportunities were poor, and another 31 per cent said they were only fair. Sixty-two per cent of the women who were enrolled as part-time students indicated that local opportunities for further education were either fair or poor, as did 63 per cent of all who were not currently enrolled in school.

Analysis also showed that perceptions of the opportunities to receive post high school training varied according to the schools the graduates had attended. This data is presented in Table 55 where it can be seen that 40 per cent or more of the graduates from schools "3," "5," "7," "8," and "11" thought local opportunities for further education were "good." On the other hand, 84, 70, 75, and 80 per cents of graduates of schools "1," "2," "4," and "6" felt that local opportunities for post high school education or training were only fair or poor. Analysis suggests that while these perceptions are in part related to proximity to the University of Arizona, socio-economic and other factors are even more significant in perceptions of "poor" and "fair" opportunities for further education.

TABLE 55

PERCEPTIONS OF LOCAL OPPORTUNITIES TO RECEIVE POST HIGH SCHOOL EDUCATION ACCORDING TO HIGH SCHOOL ATTENDED BY PER CENT

School*	Adequate	Fair or Poor
1	17	84
2	27	70
3	45	64
4	25	75
5	42	58
6	22	80
7	40	56
8	40	55
9	36	61
11	42	54

*Only the schools having the largest enrollments are shown here. Schools are numbered as they were in Chapter Two.

Types of Further Education Graduates Desire. Graduates who expressed an interest in further training were asked to indicate, by writing in the space provided, what type of further education or training they desired. Of the respondents, 184, or approximately 24 per cent indicated an interest in some type of education which might be included in a two-year community college. Their responses are categorized in Table 56.

Assuming the same proportion over the past five years, there would be approximately 3,800 recent graduates who are interested in the kind of vocational training that is typically available in a community college. On the same basis, 12 per cent, or 1,900 would be interested in some type of business training (about 1,370 of these being women), and 6 per cent, or about 950 men would be interested in some kind of technical training, with 225 of these in electronics and 110 in automotive technology. Approximately 470 would be interested in the health services, three-quarters of these being women interested in nurse's training. An additional 180 would be interested in art and design.

The foregoing estimates do not include the 16 per cent interested in liberal arts programs offered by a community college, since there is no way to determine the grade level

TABLE 56

TYPES OF FURTHER EDUCATION OF INTEREST TO GRADUATES

Type of Further Education	Number		
	Men	Women	Totals
Business Education			
Management	6	2	8
Secretarial	-	14	14
Bookkeeping and Accounting	5	9	14
Not Specified	14	33	47
Sales	1	2	3
IBM	--	4	4
Health Sciences			
Nursing	-	15	15
Dental Technology	1	3	4
Lab. Tech. - Xray	1	1	2
Agriculture			
Forestry	3	-	3
General	1	-	1
Technical			
Electronics	10	-	10
Electricity	2	-	2
Drafting	2	-	2
Automotive	5	-	5
Machinist	1	-	1
Aeronautical Design	1	-	1
Printing	1	--	1
Refrigeration	1	-	1
Tool and Die	1	-	1
Not Specified	20	-	20
Art and/or Design	2	6	8
Services			
Cosmetology, Barbering	2	4	6
Airline Pilot or Hostess	6	2	8
Law Enforcement	-	3	3
Liberal Arts	65	64	129
Graduate Colleges	62	57	124
Engineering	13	-	13
Armed Services Schools	5	-	5

of their interest. However, from these data it would appear that programs in business education, nursing, electronics, automotive technology, and art and design are indicated.

Relationship of High School Curriculum and Type of Further Education. An analysis was made to determine the relationship between the high school curriculum graduates had completed and their college attendance or lack of any post-high school training. These data are presented in Table 57. It can be observed that of the men who received no further education, 55 per cent had been enrolled in a vocational or industrial arts curriculum, and 9 per cent had studied agriculture. The majority of the women with no further training (61 per cent), had been in a business curriculum and 12 per cent had studied home economics. Eighteen and 15 per cents of these men and women who had received no further training had completed a college preparatory curriculum.

TABLE 57

HIGH SCHOOL CURRICULUM OF GRADUATES WHO ATTENDED COLLEGE AND THOSE WHO HAD NO POST HIGH SCHOOL TRAINING BY PER CENT

Curriculum Studies	No Further Training		Attended College	
	Men	Women	Men	Women
Vocational or Industrial Arts	55	2	6	2
Home Economics	-	12	-	2
Agriculture	9	-	1	-
Commercial or Business Education	-	61	6	9
College (University) Preparatory	18	15	84	86
Special Education	-	2	1	-

Failure of columns to total 100 per cent is due to non-response.

Among the graduates who attended college, 84 per cent of the men and 86 per cent of the women had been in college preparatory courses, compared to 64 per cent of all respondents. In general, it appears that graduates had been in curricula which suited the courses that they later pursued.

Perceptions of How Well High School Prepared Graduates for College or Employment. Graduates who had attended a college following graduation were asked to indicate how well they felt their high school had prepared them for college work. Those with no post high school training were asked how well high school had prepared them for employment. The results are presented in Table 58. It can be seen that 11 per cent of the men and 5 per cent of the women who went to college felt their high school education to be inadequate

TABLE 58

GRADUATES' OPINIONS ON HOW WELL HIGH SCHOOL HAD PREPARED THEM BY PER CENT

Quality of Preparation	For College by Those Who Attended College		For Employment by Those With No Additional Schooling	
	Men	Women	Men	Women
Inadequate	11	5	-	5
Fair but all could have been better	20	22	36	17
Very good in some ways; could be better in others	50	53	36	17
Excellent	17	17	18	10
Have not entered	-	-	9	22

Failure of columns to total 100 per cent is due to non-response.

preparation. Of those with no further education, none of the men and 5 per cent of the women felt high school was inadequate as preparation for employment. The seemingly lower ratings by women with no further training may in part be accounted for by the fact that 22 per cent did not respond to the question.

A further analysis of graduates' opinions of how well high schools had prepared them was made according to the high school they had attended. These data are presented in Table 59. Here it can be seen that the largest per cents of graduates rate their schools as "good" in preparation for either college or employment with the single exception of school "5," which was rated by a majority as "excellent" in preparing students for college. "Excellent" ratings in preparation for college range from none in school "1", and 3 per cent in school "6," to 26 per cent in school "5." While no graduates rated school "5" as inadequate in its preparation for employment, as many as 14 per cent rated school "6" to be inadequate in this respect.

TABLE 59

GRADUATES' OPINIONS OF HOW WELL HIGH SCHOOL HAD PREPARED THEM ACCORDING TO SCHOOL ATTENDED BY PER CENT

	Preparation for College				Preparation for Employment			
School*	Inadequate	Fair	Good	Excellent	Inadequate	Fair	Good	Excellent
1	-	-	8	-	8	8	42	33
2	9	17	34	6	11	16	23	13
3	8	13	45	9	7	11	29	13
4	3	12	31	6	3	6	47	16
5	-	5	16	26	-	5	42	21
6	4	10	32	3	14	14	28	18
7	5	14	38	20	7	10	26	17
8	-	14	43	14	3	3	40	17
9	9	18	26	17	9	12	27	15
11	9	18	42	15	6	5	26	15

*Only the schools having the largest enrollments are shown here. Schools are numbered as they were in Chapter Two.

All graduates were asked if they had decided upon the type of work they wanted to be doing ten years hence. Seventy-four per cent of the men and 69 per cent of the women had decided. Of graduates with no further education, 55 per cent of the men and 51 per cent of the women had decided on the occupation they wanted to "settle down in" compared to 77 per cent of those who attended college. When an analysis was made of these decisions by curricula studied, the general tendency for a smaller percentage of women to have made decisions was emphasized. While 75 per cent of the men who had taken college preparatory and business courses and 71 per cent who had taken vocational training had decided on a future goal, only 42, 50, and 58 per cents respectively of women who had been in vocational, home economics, and business courses had made that decision. However, 78 per cent of the women who had taken college preparatory courses had decided what type of work they wanted to be doing ten years hence.

There appears to be no significant differences that relate to current employment status except that more of those who work part time appear to have set upon future employment goals. This is most noticeable among women, with decisions for future employment having been made by 76 per cent of those who work part-time compared with 66 per cent of full-time employees and 69 per cent of those who are not employed.

Analysis by place of residence indicated a slightly lower percentage of decisions among those graduates who have continued to live in Pima County. Therefore, availability of vocational counseling and guidance services, especially for about half the young adults without further education would seem to be a desirable service within the county. This service appears to be particularly needed by women whose high school curriculum has been other than college preparatory.

Those that had decided in what occupation they wanted to "settle down in" were asked how much help in making this decision they had received from their high school. Of all the respondents, 46 and 39 per cents respectively of men and women, or a total of 43 per cent indicated they had received "little or no help" from their high schools in making the decision. Fourteen per cent of the men and 17 per cent of the women felt they had lots or considerable help from their high schools, while 26 per cent of both believed they had received "some" help. Analysis of these items according to current place of residence and among those who had gone to college and those with no post high school education revealed substantially the same results.

Long Range Occupational Plans of Graduates. The occupational aspirations of graduates suggest the kinds of post high school training that would have been most appropriate. Graduates were asked to name their first preference for the kind of job which they would like to have ten years from now. Table 60 presents a distribution by sex of the occupational aspirations of graduates who have decided what kind of job they would like to have ten years from now. For example, it may be observed that of the men, 49 per cent evinced interest in one of the professions as did 42 per cent of the women. Nine per cent of the women indicated an interest in nursing and another 10 per cent of them aspired to office-clerical-secretarial types of work

Ten per cent of the men were interested in drafting or the building trades, factory work, or mechanics or machine shop, and 3 per cent were interested in electricity or electronics. An additional 3 per cent of the men indicated their preference for some type of agricultural related occupation, 12 per cent aspired either to run their own business or to be in business management, banking or a related field.

TABLE 60

OCCUPATIONAL ASPIRATIONS OF GRADUATES BY PER CENT

Occupation	Men	Women
Professional	49	42
Nursing	*	9
Military Service	6	*
Office-Clerical-Secretarial	1	10
Housewife	-	23
Electricity or Electronics	3	-
Selling-Salesman-Waitress	3	-
Drafting or Building Trades	3	-
Mechanics or Machine Shop	4	-
Agriculture and Related	3	1
Factory Foreman or Worker	2	-
Airline Pilot or Hostess	3	*
Art (Interior decorating, commercial art, etc.)	1	2
Run own business	3	-
Laboratory technical	1	1
Beautician or Barber	-	3
Religious worker	2	1
Entertainer	1	*
Business management, Banking, etc.	9	*
Law Enforcement	2	1
Government Services	2	2
Miscellaneous	2	1
No response	1	1

*Less than 1 per cent.

An analysis of occupational aspirations was made among those who had gone to college, and this is shown in Table 61. As would be expected, somewhat higher per cents of this group aspire to the professions: 45 and 43 per cents respectively of men and women. Nevertheless, 3 per cent of these men aspire to drafting or the building trades, mechanics or machine shop employment, or factory work; 1 per cent are interested in electric or electronic technology; and 3 per cent expressed interest in agricultural related occupations. This perhaps says less about the guidance received than it does about local opportunities for certain kinds of training and education.

TABLE 61

OCCUPATIONAL ASPIRATIONS OF GRADUATES WHO ATTENDED COLLEGE BY PER CENT

Occupation	Men	Women
Professional	45	43
Nursing	*	8
Military Service	5	*
Office-Clerical-Secretarial	*	5
Housewife	-	12
Electricity or Electronics	1	-
Selling-Salesman-Waitress	2	-
Drafting or Building Trades	1	-
Mechanics or Machine Shop	1	-
Agriculture and Related	3	*
Factory Foreman or Worker	1	-
Airline Pilot or Hostess	2	-
Art (Interior decorating, commercial art, etc.)	1	3
Run own business	1	-
Laboratory technical	*	1
Beautician or Barber	-	-
Religious worker	1	1
Entertainer	1	1
Business management, Banking, etc.	7	-
Law Enforcement	1	1
Government Services	1	1
Miscellaneous	2	1
No response	22	31

*Less than 1 per cent.

Graduates' Evaluation of Selected Services and Facilities in High School. An attempt was made to determine the opinions of graduates as to how effective certain school facilities and services had been in helping them. Each was asked to indicate whether the help of a given service or facility was "good," "fair," or "poor." These data are presented in Table 62, analyzed for men, women, and both sexes. For ease of interpretation, the largest per cent of responses for each item is underscored. For example, of the total group, 34, 37, and 27 per cents respectively felt that high school counseling services had been "good," "fair," and "poor." The largest incidence of response was "fair." The remaining portions of Table 62 are to be interpreted likewise.

TABLE 62

PER CENT OF GRADUATES BY HOW WELL THEY THOUGHT FACILITIES AND SERVICES HELPED THEM

School Services and Facilities	Men			Women			Both		
	Good	Fair	Poor	Good	Fair	Poor	Good	Fair	Poor
Someone to confide in about school problems	33	38	26	35	37	27	34	37	27
Library materials on vocations	41	40	16	42	44	11	41	42	14
Offering many courses from which to choose	55	31	10	51	37	10	53	34	10
Assistance in finding part time employment	11	22	45	12	23	41	11	22	43
Social Activities	56	34	7	50	38	9	53	36	8
Someone to confide in about personal problems	23	29	38	22	31	38	22	30	38

In general, it can be seen that the largest per cent of graduates judged social activities as "good," and this was the rating the largest per cent gave to courses to choose from. Help in finding part-time employment and the availability of someone they could confide in about personal problems was judged as "poor" by the largest per cent of graduates. Judged as "fair" by the largest per cent of all graduates were counseling services and library materials on vocations, although men judged library vocational information to be "good."

In a further analysis of these responses, those who had gone to college evaluated these services and facilities as did the total group. Among those with no further education, however, there were some differences of note. The adequacy of library materials on vocations was attested to by graduates with no post high school education, for 64 per cent of the men deemed it "good" as did 46 per cent of the women. None of these men rated assistance in finding part-time employment as "good," yet they were the only group to give better than a "poor" rating to having someone to confide in about personal problems, 45 per cent saying it was "fair." The women with no further education were the only group giving a plurality to having someone to confide in about school problems, 44 per cent calling it "good." On the other hand, these women were the only group in which the largest per cent rate courses to choose from as only "fair," 49 per cent of them doing so.

Some of the same results were found when analysis of facilities and services was made according to curriculum studied. Those who had taken college preparatory courses, like those who had gone to college, responded substantially as did the total group. In general, men and women in vocational and business curricula responded as did those who had no further schooling, with the exception that these women were the only groups calling social activities only "fair."

While there is some indication that course offerings did not meet the needs of women not going on to school as well as they did for other groups, it seems more significant that poor ratings were given to aid in finding part-time work and counseling on personal problems. It also seems important to note that almost two-thirds of all graduates indicated that the counseling services of high schools had been either "fair" or "poor."

The graduates' evaluations of these services were found to vary from school to school, but the greatest differences were in regard to counseling on school and personal problems. To illustrate this variation, data are presented in Table 63 by school. Here one can observe that in school "1," 17 per cent of the graduates indicated counseling on school problems was "good", while 42 per cent rated it as "poor," and that 17 per cent rated counseling on personal problems as "good," while 58 per cent rated it as "poor." Ratings of "good" on counseling about school problems ranged from 17 to 56 per cent, while ratings of "poor" ranged from 6 to 42 per cent. The evaluation of counseling about personal problems also varied from school to school, with ratings of "good" ranging from 12 to 41 per cent, and ratings of "poor" ranging from 16 to 58 per cent. A comparison of these perceptions with those of current seniors (see Table 47, Chapter Two), shows a general tendency for the graduates who have responded to give better ratings to counseling about personal problems. The one notable exception to this general tendency is school "6" where counseling on personal problems was rated "good" by only 12 per cent of those graduates who responded compared to about 20 per cent of seniors who rated it as "good." It would appear that this school has made recent progress in the area of counseling.

TABLE 63

GRADUATES' EVALUATION OF SELECTED COUNSELING SERVICES BY PER CENT

School*	Someone to Confide in About School Problems		Someone to Confide in About Personal Problems	
	Good	Poor	Good	Poor
1	17	42	17	58
2	24	27	16	51
3	36	31	21	42
4	56	6	41	16
5	32	21	16	42
6	35	18	12	37
7	36	28	16	38
8	40	20	29	31
9	40	24	17	40
11	17	38	58	18

*Only schools having the largest enrollments are shown here. To facilitate comparison, schools are numbered as they were in Chapter Two.

Summary and Conclusions. Data presented in this chapter seem to warrant the following summary statements and conclusions:

1. Of all graduates from Pima County high schools between 1961 and 1965, 59.8 per cent requested transcripts forwarded to at least one institution of higher education. It can be said that approximately 60 per cent of all graduates for those years continued their education, and that this percentage has grown each year.

2. The response from all graduates may be biased in favor of persons who had continued their education. A larger per cent of those who responded had continued their schooling than principals' reports indicated had done so.

3. Of respondents, two-thirds were living in Pima County at the time of the study. Over a third of those who left the county had done so within a year following graduation. The population does not appear to be as stable among the group that has completed high school as it is for those with children in high school. Marriage seems to

occur earlier than in many areas, with the incidence of divorce or separation being higher.

4. Seven per cent of the graduates responding had received no type of education after graduation, 29 per cent had received one-the-job training, 66 per cent had attended a college or university, and 11 per cent had attended a business or vocational school.

5. Of those who were not currently attending school, 86 per cent of the men and 55 per cent of the women were employed full time. Among those who were presently part-time students, 92 per cent of the men and 62 per cent of the women were employed part time. Among full time students, 8 per cent of the men were employed full time, while 43 and 42 per cents of men and women were in part-time jobs.

6. At the time of the study, 49 per cent of the men and 29 per cent of the women were attending school full time, while 54 and 34 per cents respectively of men and women who still lived in Pima County were attending school full time. Thirty-four per cent of all graduates were attending the University of Arizona, 6 per cent were in other Arizona universities and junior colleges, and 6 per cent were attending schools in other states.

7. Seven out of every ten graduates expressed present interest in further education. Among those with no further schooling, 81 per cent of the men and 51 per cent of the women said they were interested in opportunities for further education, as did 83 per cent of the men and 86 per cent of the women who were enrolled as part-time students.

8. The most important reasons why graduates were not presently attending school were "financial" and "family responsibilities." Forty-five per cent of the men with no education beyond high school said that they were not currently in school because of financial reasons, as did 12 per cent of the women with no further education.

9. Of those graduates who did not attend school following graduation, 73 per cent of the men and 42 per cent of the women indicated they definitely would have continued school provided more financial assistance had been available at the time of graduation.

10. Of the graduates living in Pima County, 74 and 60 per cents respectively of men and women expressed interest in further education.

11. Parental attitudes as perceived by graduates relates to their schooling after graduation. However, among the men who had no further training, although 18 per cent perceived negative or indifferent attitudes, 36 per cent felt that their parents had wanted them to go but couldn't afford to send them to college.

12. A fourth of the graduates indicated that if two years of college or semi-professional vocational training had been available in the region when they graduated from high school, they definitely would have taken advantage of it, while 22 and 18 per cents of men and women respectively "might" have taken advantage of it. Of graduates who received no type of further education, 64 and 34 per cents of men and women respectively said they would have taken advantage of local opportunity, while another 9 and 20 per cents "might" have done so.

13. Of graduates who had attended a college or university, 38 and 32 per cents respectively of men and women indicated they definitely or might have taken advantage of local opportunity had it been available at the time of graduation. While 28 and 20 per cents respectively of men and women currently enrolled in school as full-time students might be expected to have taken advantage of local opportunities for two years of college or some type of technical or semi-professional training, 58 and 35 per cents of men and women enrolled as part-time students might have done so.

14. Seventy-five per cent of the men and 59 per cent of the women who had taken vocational studies while in high school said they might or would definitely have taken opportunity of a local institution offering two years of college or semi-professional vocational training, as did 69 per cent of those who had taken business courses.

15. Of graduates who did not attend any kind of school after graduation, 18 per cent indicated they would have been most interested in a community college, while 9 and 34 per cents respectively of these men and women would have been most interested in a trade or technical school.

16. Sixty per cent of all graduates felt that the availability of opportunity for education beyond the high school for Pima County youth was either only "fair" or "poor." Of graduates who had attended a college or university, a slightly higher percentage felt the availability of opportunity was adequate than did those who had had no further education. These perceptions varied with the high schools the graduates had attended, with appraisals of fair or poor ranging from 54 per cent in one school to 84 per cent in another.

17. Based on types of studies that graduates presently interested in education would like to pursue, and upon their long range occupational goals, it seems that vocational programs are needed in business education, nursing, electronics, mechanical technology, liberal and fine arts, agricultural related, drafting, and art and design technology. It also appears that some who have gone to college aspire to future technological occupations for which training is not typically offered in four year institutions.

18. A relatively high proportion of graduates who attended a college or university had completed a high school curriculum designed for that purpose.

19. Of the graduates who had attended college, almost one-third and one-fourth respectively of the men and women felt that their preparation for college was "inadequate" or "fair," while 36 per cent of the men and 22 per cent of the women with no further education indicated the same about its adequacy as preparation for employment. Responses varied according to the school attended. Ratings of "excellent" in the matter of preparation for college ranged from none in one school to 26 per cent in another, and in regard to preparation for employment, the range was from 13 to 33 per cent.

20. Only slightly more than half the graduates with no further education or training beyond high school had decided upon the type of work they wanted to be doing ten years from now, compared to almost three-fourths of those having attended a college or university. Forty-three per cent of all respondents felt they had received little or no help from their high schools in making decisions about future goals.

21. About two-thirds of all respondents judged high school counseling services as "fair" or "poor," and the largest percentage of both men and women judged as "poor" the provision of someone in whom they could confide about personal problems, although this judgment varied from 58 per cent in one school to 16 per cent in another.

22. Evaluations of most selected school services and facilities studied are related positively to the evaluations of general school effectiveness; the strongest relationship is between general school effectiveness in preparing for a job or further schooling and counseling services and provision of someone in whom confidence can be placed about personal problems.

23. Almost one out of four of the recent graduates of Pima County high schools express present interest in further study of the types which community colleges can and do offer, thus identifying the presence of an educational backlog in the area.

24. Evidence suggests the desirability of high schools studying the effectiveness of counseling and guidance programs, with a view to improvement. Strong, effective secondary school guidance and counseling programs are a necessary ingredient in the development of the best community college service.

CHAPTER IV

A STUDY OF PARENTS OF FIFTH GRADERS

Introduction. Since the planning of a community college is a long-term exercise in civic participation, sometimes spanning a period of several years between the initial survey and the actual opening of classes on the campus of the new college, it is desirable to sample the opinion of a group of parents whose children will be of college age some seven or eight years from the time of the initial survey. The results of such a study are quite useful for planning purposes, especially as regards the kind of program which should be offered by the college, and the order of priorities to be used in establishing the several curriculums. Furthermore, although the number of youth in Arizona currently reaching eighteen years of age in a given year is threatening to overtax post-high school educational facilities, the really big increases in youth population of college age are yet to come. Beyond 1966, the numbers reaching 18 each year continue to increase with no evidence of leveling off until after 1970. Since institutions of higher education in Arizona are even now finding it difficult to cope with enrollment pressures and since the desires of youth (and their parents) for college-level educational opportunity are most certainly apt to increase rather than to remain at current levels, it is indeed the better part of wisdom, in a survey such as this, to find out what parents of youth now in the elementary grades are thinking about future college opportunities for their children.

During the late Spring of 1966, the Youth Needs Subcommittee developed a questionnaire designed to elicit information and opinions from a large number of parents of fifth grade pupils throughout Pima County. The questionnaire used was modified from one used elsewhere in a similar study. Using an approved sampling technique and with co-operation of school administrators of public school systems, a list of elementary schools was identified. These schools were deemed to be representative of all elementary schools. All fifth grade children in each selected school were asked to deliver a questionnaire in a sealed envelope to one of their parents. Each questionnaire was accompanied by a letter of explanation about the Junior College Study which asked the parent to fill it out completely and to send it back in a sealed envelope provided for the purpose to their local school with their fifth grade child. Responses were received from parents of 666 fifth grade children, or nearly all those who had been contacted. Fifth grade teachers were quite co-operative and assisted in getting the questionnaires back. The return represented an 11 per cent sample of all fifth grade children in Pima County.

Results were coded and analyzed by use of the data processing equipment. Various analyses were made including a separation of results from parents of female pupils from those of male pupils. Where differences were apparently significant for interpretation, results have been presented in this fashion. It is suggested that the information and opinions thus obtained are highly important for junior college planning purposes. Results presented below are divided into sections, each representing the responses concerning one questionnaire item.

Location of Employment of Parents. It was deemed advisable to determine the extent to which Pima County is an economic unit. Are most of the employed parents employed in Pima County, or is Pima County a "bedroom community" for other areas where greater employment opportunities exist? No attempt was made to determine the extent to which either fathers or mothers were employed at a gainful occupation. Data merely indicate that, of those employed outside the home, the percentages were as shown in Table 64.

TABLE 64

PLACE OF EMPLOYMENT OF PARENTS OF FIFTH GRADERS

Location	Per cent of Parents Employed Who Live in Pima County	
	Mothers	Fathers
In Pima County	66.0	81.6
Outside Pima County	.5	9.6
No Answer	33.5	8.8

About a third of the mothers and 9 per cent of the fathers either gave no answer or were unemployed. Of the fathers, 9.6 per cent were reported employed outside Pima County as were .5 per cent of the mothers. In general, results reveal that Pima County is a defined economic unit and that it is not primarily a "bedroom community." Nearly 82 per cent of all fathers and two-thirds of all mothers were working in Pima County where they live. Since relatively high percentages of young (parents of fifth graders are typically in the age group 30-45) workers are employed in Pima County, it would seem wise to consider the occupational education needs of Pima County business and industry as well as the broader state and national needs in planning the program for a future junior college.

Mobility of Parents of Fifth Graders. Is Pima County a relatively stable community, or is it an area with a rapid population turnover? Do people move in and out frequently in response to changing social and economic conditions, or is the area one of residential stability? The answers to these questions have meaning for the community junior college study, for a stable population is interested in overall and long-term improvement of the community, including the expansion of educational opportunities, while a migrant population is usually more interested in the here and now, specifically in the rate of pay for existing jobs.

The questionnaire elicited information on the length of residence of the family in Pima County, and the results are summarized and presented in Table 65. The results indicate a considerable degree of population stability, as least as far as young families with fifth grade children are concerned. Over 43 per cent of the respondents had resided in Pima County for over ten years, and 70 per cent for five years or more. It appears the county is characterized by a higher population stability than may have been thought previously by some residents. If past experience continues into the future, nearly seven out of ten families queried will be residing in Pima County when the present fifth graders become potential college students.

TABLE 65

LENGTH OF TIME RESIDENCE HAS BEEN IN PIMA COUNTY

Time in Years	Per Cent
Less than one	8.1
One to Five	21.1
Five to Ten	26.2
Over Ten	43.5
No Answer	1.1

Educational Status of Parents of Fifth Graders.

Studies conducted in many areas of the nation over the past thirty years indicate that there is a very close relationship between the educational attainments of parents and their plans and aspirations for the education of their children. In general, parents who are college graduates or who have had some college work expect their children to attend college. Parents with only a high school education or less are not so apt to be making definite plans for college attendance for their children. However, in recent years there has been a tremendous increase in the desire, by parents of all educational levels, for post-high school educational opportunities for youth. American parents typically want their children to "succeed," not merely to "succeed them," and they are increasingly looking upon higher education as the path to success. Parents too, particularly the younger parents in the age group queried by this study, are aware of the increasing complexity of our society and of the alarming increase in the sophistication of jobs at all occupational levels. Workers in the 30-45 year age group are increasingly, and sometimes painfully, aware of the limitations placed on their upward occupational mobility (or indeed, upon their ability to retain the job they now have) by a lack of post-high school education and training. To ascertain the educational levels of the parents of the sample of fifth graders, and to get their opinions on the desirability of post-high school education and training, a number of questions were asked. Data on the educational status of parents responding to the study are presented in Table 66.

TABLE 66

EDUCATIONAL STATUS OF PARENTS AS INDICATED BY
FORMAL (IN SCHOOL) EDUCATION COMPLETED
BY PER CENT

School Level Completed	Fathers	Mothers
8th Grade or more, but not a high school graduate	19.1	19.3
High School Graduate but no College Work	38.3	48.2
Some College	18.5	18.7
College Graduate	18.5	10.2
No Answer	5.6	3.6

The results show that 18.5 per cent of the fathers are college graduates, and that one mother in ten has a college degree. Adding the percentages for those with "some college" and for those with college degrees reveals that 37 per cent of the fathers and almost 29 per cent of the mothers have had educational experiences at the college level. These results indicate that this group of parents in Pima County has an average educational level considerably above that for the nation as a whole. The rather significant percentage of the persons with "some college" indicates that persons of college age ten or even twenty years ago participated in post-high school education and training, even though they did not complete work for a four year degree.

Parents' Plans for Further Education of the Children Who Are Now Fifth Graders. Opinions are just that -- opinions. Up to this point, the information solicited from the sampling of parents consisted of factual matters. The next several questions attempted to obtain carefully considered opinions about the amount of further (formal) education which the parents expected the fifth grade child to complete. The specific question asked was, "In view of your child's scholarship so far in school, how much further education do you plan for him (her) to complete?" Respondents were asked to indicate one or more responses to the question, and these results are summarized and presented in Table 67.

TABLE 67

PARENTS' OPINIONS ON AMOUNT OF FURTHER EDUCATION PLANNED FOR PRESENT FIFTH GRADERS ANALYZED ACCORDING TO SEX OF CHILD

Level of Education Being Planned	Per cent		
	Males	Females	Both
Complete High School	18	24	21
Complete Trade or Vocational School	8	10	9
Complete Two-year Junior College	30	39	35
Complete Four-year College or University	66	56	61

The first impression gained from a study of Table 67 is the high percentage of parents who are "planning on" their children completing four years of college. The question asked them to consider their child's scholarship to date in the hope that some measure of realism might be injected into the responses, but in spite of this, it seems that more than half of the respondents are "planning on" a college degree for their children. Currently, in the United States, only about 15 per cent of young people of college age are earning baccalaureate degrees, and it is reliably estimated that this figure will not exceed 20 per cent by 1970. It is highly probable that many parents confused "planning" with a kind of nebulous desire. This contention is borne out below in the analysis of the responses to the question about how parents are planning to finance the post-high school education of their child.

Despite the fact that there is probably a considerable degree of wishful thinking in the "plans" of the respondents, the overwhelming interest among parents in college opportunities for their children is apparent, and has significant implications for the present study. It is a matter of interest to note that only one in five of the respondents is thinking of allowing his child's education to end with high school, and that over one in three (35 per cent) wants a community or junior college experience. In passing, it is of some interest to note the relatively small interest in a trade or vocational school experience. Yet, in another section (below) significant numbers of respondents indicated that they would be interested in their child's preparing for technical, business, or highly skilled occupations. It is interesting to note also that parents think about the same of higher education levels for their male children as for female ones. Summarizing the results of Table 67, it is probably safe to say that among the representative group of fifth grade parents contacted, there is tremendous interest in college educational opportunities, and considerable interest in education at the junior college level.

An analysis was made to determine the relationship between parents' level of educational attainment and the amount of further education they planned for their child to complete. Shown in Table 68 are the percentages of parents indicating each type of further education, according to their own level of education.

Observing Table 68, it can be seen that of the fifth grade children whose fathers were reported as having graduated from elementary school as the highest level of formal schooling, 39 per cent indicated they planned for their child to complete high school as the highest level. Likewise, it can be seen that, respectively, 12 and 41 per cents of those fathers' children would be expected to complete a trade or vocational school or a two year junior college. This would compare to 10 per cent of the children expected to complete high school whose fathers were reported to have completed only elementary school. In homes where the father completed elementary school, 36 per cent of them planned for

TABLE 68

RELATIONSHIP OF PARENTS' EDUCATION AND LEVEL OF EDUCATION PLANNED FOR CHILD

Amount of Education For Child	Per cent Fathers				Per cent Mothers			
	Elem Sch.	H.S. Grad	Some Col.	Col. Grad	Elem Sch.	H.S. Grad	Some Col.	Col. Grad
High School	39	22	11	10	41	22	12	1
Trade or Vocational Sch.	12	11	7	2	10	10	7	-
Two-Year Jr. College	41	36	34	24	29	42	34	15
Four-Year Col. or University	36	58	71	89	37	60	79	96

their fifth grade child to complete high school as the highest level, whereas, in homes where fathers were reported to have completed college, 89 per cent of the fifth grade children were expected to complete college as the highest level planned for them. The rest of the table is to be interpreted likewise. Observation reveals at once the positive and direct relationship between level of parents' education and the level of education yet planned for the child. Of particular interest is the size of the percentages of parents expressing interest in two year college education and the relationship of this interest to parents' level of educational attainment. As level of parental educational attainment rises, the per cent expressing interest in their child completing a junior college or a trade or vocational school declines. In general, mothers' levels of education are associated with higher expectations for youth than are levels of fathers' education.

Attitudes Toward Higher Education Opportunity in America. There are two widely differing (and acrimoniously debated) philosophies about higher education in the United States today, and possibly in Pima County. One group cherishes the European tradition that colleges and universities should enroll only the intellectually gifted, and that their curriculums should consist only of the liberal arts and the sciences and should eschew any offerings which relate to the practical arts or to the ways people of our society earn a living. A second group believes that the demands of our society and of the world today are such that the nation will stand or fall on the matter of how successfully all the people are trained and educated to the maximum of their capabilities. Since one of the major functions of a junior college is the provision of courses and curriculums leading to occupational competence, it was felt necessary to obtain the collective opinion of the sample population with regard to the question, "Who should go to college?" An analysis of results appears in Table 69.

TABLE 69

OPINIONS OF PARENTS OF FIFTH GRADERS ON WHO SHOULD GO TO COLLEGE ANALYZED BY SEX OF CHILD

	Per cent		
Opinions on Who Should Go To College	Boys	Girls	Both
Those With Superior Academic Ability Only	2	1	1
Those With Ability Who Have the Financial Means	5	5	5
All Who Have Ability to Profit From Either Academic or Semi-Professional and Technical Education, Regardless of Financial Means	89	88	88
Other Combination (write in)	3	3	3
No Answer	2	3	2

The evidence here appears definite and convincing. Pima County residents in the age group 30-45, who are parents of fifth grade children, and as represented by the random sampling chosen, overwhelmingly reject the philosophy that colleges and universities are only for the intellectually elite. They reject almost as strongly the idea that financial means is a necessary adjunct to college attendance. It would seem that, for the sample studied, Pima County residents see the need for institutions which will offer educational opportunities for their children, consisting of a wide diversity of curriculums including academic and occupational education, and institutions whose tuition is low enough that financial hardship will not be a determining factor in decisions to attend (or not to attend) college. An analysis was made of the relationship of opinions on this question and level of education possessed by the parents. It was found that parents of all educational levels in approximately the same percentages felt that all persons should go to college who have ability to profit, regardless of financial means. Surprisingly, the slight differences that occurred found parents with the lower levels of educational attainment feeling more restrictive about who should go to college.

A further analysis was made about feelings on this question and whether parents were interested in having their child prepare for entry into a skilled trade. No difference existed between those who would or would not be interested in having their child prepared for such an occupation.

Degree of Certainty of Child's College Attendance. As a check on a prior question, it was decided to ask each parent to indicate his (or her) degree of certainty, at the present time, that his fifth grade child would attend college. The results are summarized in Table 70.

TABLE 70

DEGREE OF CERTAINTY THAT CHILD WILL ATTEND COLLEGE BY PER CENT RESPONSE OF PARENTS ACCORDING TO SEX OF CHILD

Levels of Certainty Expressed By Parents	Per cent		
	Boys	Girls	Both
Definitely Planning on Child Attending	49	45	47
Probably Will Attend	29	29	29
Uncertain At This Time	18	20	19
Probably Will Not Attend	3	4	4

Observing Table 70, the reader can see that 49 per cent of the parents of boys indicated that they were definitely planning on the boy going to college. This contrasts with 45 per cent of the girls' parents. The rest of the data from this table are to be interpreted in like fashion. Again it is noted that the level of expectation for college attendance of their children is very high for this sample of parents. If the "definite" and the positive "probable" percentages are added, 76 per cent of the parents sampled indicate that, in all probability, their fifth grade child will attend college of some kind at a later date. Attention is called to a comparison of this figure with that obtained from Table 67 by adding the per cents of those expecting either community junior college attendance or four-year college or university attendance. The combined percentage from Table 67 is 96 per cent. It is interesting to speculate about reasons for the significantly lower (but still high) figure in the Table 70. Perhaps the words "How certain are you?" in the question caused more sober reflection on the part of the respondents.

Responses about certainty of college attendance were analyzed in relation to responses to several other factors. Parents who expressed interest in their child's preparing for entry into a skilled trade in larger proportions also were more certain that their child would go to college. Two-thirds of the former compared to 42 per cent of the latter (those who expressed negative responses about their child preparing for a skilled trade) were either very certain the child would attend or felt that the child would probably attend.

Responses were also analyzed to determine the degree of certainty and level of educational attainment achieved by parents. These data appear in Table 71. Observing Table 71, it can be seen that under the educational level of parents are given the per cents by degree of certainty. For example, a fifth of the mothers having completed elementary school also had a child about whom the feeling was very certain that he would attend college. For mothers with the same level, 32 per cent thought the child would probably attend, 36 per cent were uncertain, 9 per cent felt the child would probably not attend, and 3 per cent were quite certain that the child would not attend. The rest of Table 71 is to be interpreted likewise.

TABLE 71

CERTAINTY OF PARENTS THEIR CHILD WILL ATTEND COLLEGE AND LEVEL OF PARENTS' EDUCATION

Degree of Certainty Child Will Attend	Per cent of Parents by Educational Level							
	Father				Mother			
	Elem Sch.	H.S. Grad	Some Col.	Col. Grad	Elem Sch.	H.S. Grad	Some Col.	Col. Grad
Definitely Plan on his Attending	21	42	60	74	20	44	65	81
Probably Attend	37	28	29	24	32	32	28	16
Uncertain	35	27	7	.8	36	21	6	3
Probably Not Attend	7	3	3	-	9	3	1	-
Quite Certain Not to Attend	-	-	1	1	3	-	-	-

It can be determined that in homes where fathers and mothers had an elementary education, 58 and 52 per cents respectively indicated that the child would definitely or probably attend college compared to 98 and 97 per cents respectively from homes where parents had a college degree. Observation of the data in this table reveals that the higher the education level of the parents, the more certain they are that their child will attend college. Conversely, the less education of the parents the more uncertain they are and the less likely it is that the child will attend college.

A further analysis was made to determine the relationship between the certainty which parents expressed that their child would attend college and their interest in their child preparing for a skilled trade. Smaller per cents of parents interested in their child being prepared for a skilled trade were certain that their child would definitely or probably attend college than of those parents who were not interested that their child be prepared for such an occupation. In fact, 31 per cent of parents interested in their child being prepared this way were either uncertain or felt that the child would probably not attend college, compared to only 11 per cent of parents expressing no interest in such training.

Interest in Trade and Skilled Craft Training. In America today, approximately 10 per cent of the labor force is engaged in occupations which fall within the category of the skilled trades. Although jobs at the semi-skilled and unskilled levels are gradually decreasing in numbers, and jobs at the professional and semi-professional levels are markedly increasing, in response to the exploding technology of this decade, the demand for skilled workers is remaining about steady. By 1970 it is expected that perhaps 12 per cent of the labor force will be engaged in the skilled occupations. In contrast, the number of jobs for unskilled and farm workers will decrease markedly to the extent that by 1970 only about 5 per cent of the labor force will be so employed.

It was decided to ascertain the extent of interest in education and training for entry into the skilled trades, as evinced by the sample population of parents of fifth graders. The question asked was, "Are you interested in your child's preparing for entry into a skilled trade?" It was explained that such preparation ordinarily requires high school graduation plus trade school or junior college work, and usually several years of apprenticeship. A third of the parents indicated they would not be interested in such training, and 57 per cent indicated that they would be interested. A tenth did not respond to the question. Responses to the question were about the same for parents of boys as for girls.

The interesting thing to note here is the seeming inconsistency of these results with those from Tables 67 and 70.

Here we can see that 57 per cent of the parents sampled are at least thinking about the possibility of their child's entering the labor force in a capacity involving working with his hands at the level of the highly skilled occupations. Results from Tables 67 and 70, it will be recalled, indicated that nearly 96 per cent of the respondents "planned" to have their children attend college, and that 76 per cent were either definite their child would attend or that he probably would. Forty-seven per cent indicated that their child would definitely attend college. It is probable that the answers to the present question under consideration are more realistic than those from Tables 67 and 70. In any event, the answer with respect to education and training for entry into the skilled trades give some direction to thinking about the kinds of educational and training programs which should be offered if a junior college is established in Pima County.

Responses of parents on interest in having their child prepare for entry into a skilled trade were analyzed according to length of time the parent had lived in Pima County. Affirmative responses ranged from 53 to 60 per cents, with no pattern of responses associated with length of residence. However, about 3 per cent of parents who had lived in the area less than five years compared to 1.6 per cent living there longer were interested in their child preparing for a professional career. Of parents having lived in the area between 5-10 years, 43 per cent indicated they would plan on trade or vocational school as the type of further education they expected their child to complete. This compares with 34 per cent who had lived in the county over ten years, 27 per cent for those who had lived there 1-5 years, and 32 per cent for those having lived there less than one year.

Interest in having their child prepare for a skilled trade was analyzed according to level of parents' education. Of fathers reporting only an elementary school education (126), 79 per cent indicated this type of interest compared to 67 per cent having a high school education, 49 per cent with some college, and 23 per cent who were college graduates. Of mothers reporting only an elementary school education, 75 per cent expressed such an interest for their child as did 65 per cent with a high school education, 45 per cent who had some college, and 16 per cent who were college graduates. Parents' aspirations for their children are directly associated with their own levels of previous education.

Parents' interest in their child preparing for a skilled trade was analyzed according to how much further education they plan for him to complete. Twenty-six per cent who felt their child should prepare for a skilled trade indicated high school as the level planned for him to complete, 13 per cent indicated a trade or vocational school, 43 per cent indicated a junior college, and 51 per cent indicated a four-year college or university. Of those expressing no interest in their child preparing for a skilled trade, 80 per cent indicated the level planned for the child to complete was a four-year college or university, 20 per cent indicated a junior college, 2 per cent indicated a trade or technical school, and 15 per cent indicated high school. It can be noted that 56 per cent of parents interested in having their child prepare for a skilled trade would expect him to complete work in a post-high school educational institution. Apparently, 51 per cent would have the child prepare for a skilled trade in addition to getting a four-year college degree. Perhaps this is a part of the means. The reader may recall that when parents were asked how much further education they planned for their child, they were given the opportunity to indicate more than one choice; therefore responses summed to more than 100 per cent, for some respondents did indicate more than one type of school.

Semi-professional, Technical, and Business Occupations. The nature of the American economy has been changing under the impact of automation and technology for the past thirty years. While the number of persons engaged in professional and managerial occupations has increased from 6 per cent in 1930 to over 15 per cent today (and will probably reach 20 per cent by 1970), the number of persons in semi-skilled, unskilled, and farm occupations has decreased from nearly 60 per cent in 1930 to less than 25 per cent today (and will probably decrease even further to less than 20 per cent by 1970). Clerical and sales jobs have stayed about steady (17 per cent), as have also the skilled trade occupations (12 per cent). The most significant change has occurred in the middle-level occupations -- those between the professions on the one hand and the skilled (manual) occupations on the other. This "middle-manpower" group has increased from only 6 per cent of the labor force in 1930 to about 20 per cent of the labor force today, and all indications point to further gains and a probable 30 per cent share of the labor force by 1970. Obviously, such dynamic changes in occupational structure have serious implications for education, and particularly for post-high school education, since the demands of most of the semi-professional and technical jobs cannot be met by education and training at the high school or vocational school level.

Parents of fifth graders were asked to indicate whether or not they were interested in their child's preparing for entry into any one of twenty-five different semi-professional, technical, and business occupations requiring two years of college level education and training. Since the responses were divided among so many different occupations, percentages were not as significant as absolute numbers. Table 72 contains data on the numbers of parents interested in two-year college programs of education and training for middle-level manpower occupations.

TABLE 72

EXTENT OF PARENTAL INTEREST IN MIDDLE-LEVEL MANPOWER OCCUPATIONAL EDUCATION FOR THEIR CHILD

Occupation	Number of parents checking			Occupation	Number of parents checking		
	Boys	Girls	Both		Boys	Girls	Both
Accounting	21	25	46	Mechanical Tech.	24	2	26
Agriculture	16	2	18	Music	14	42	56
Architectural Drafting	18	4	22	Nursing	3	88	91
Automotive Tech.	10	2	12	Radio-TV Tech.	16	2	18
Banking	12	20	32	Refrigeration & Air Condition.	51	107	158
Chemical Tech.	20	12	32	Retailing	1	3	4
Dental Tech.	22	21	43	Salesmanship	3	6	9
Drafting	16	2	18	Secretarial	4	9	13
Electronic Data Processing	22	7	29	Surveying	6	91	97
Electronics Tech.	32	6	38	X-Ray Tech.	11	2	13
Home Making	-	52	52	Undecided	8	17	25
Laboratory Tech.	18	22	40	Other	72	58	130
Medical Tech.	14	20	34	Not Interested in these fields	24	39	63

Of the 666 questionnaires returned, responses were given to this question by 657 respondents. Some respondents checked two or three categories as having interest for them as they thought about future careers for their children and about college level preparation for those careers. If the number of responses for "other," "undecided," and "not interested in these fields" are deducted from the total number of those responding to the item, a total of 439 responses is obtained. The indication is that these sets of parents have expressed some interest in the possibility that college level training might be available in Pima County for these middle-manpower occupations. It is premature, of course, to come to any definite conclusions with regard to specific courses which should be offered if a junior college is established, but the interest clues exhibited by these parents would indicate that serious consideration and further study be given to the need for programs of education and training for the following "families" or "clusters" of semi-professional, technical, and business occupations.

1. Accounting and business Mgmt. (Banking)
2. Electronic (and electrical) technology
3. Refrigeration and Air Conditioning
4. Medical and dental technologies
5. Music
6. Drafting
7. Nursing
8. Data Processing
9. Surveying

In addition, it would appear that parents feel that emphasis should be given to education and training in home making, semi-professional and technical curriculums, as organized in the typical junior college program, involve courses whose level of rigor demands thorough high school preparation, especially in the subject matter fields of mathematics, science, English, and history. These programs typically involve students whose ability, as measured by high school grades, is at or above the fortieth percentile of the student's graduating class. The reader should at this point be reminded that this study involved only a sampling of parents of fifth grade children in the county. Had all been asked to respond, it is not felt that the picture of interest and emphasis would have been materially changed from the one obtained here.

Parental Interest in Professional Careers for Their Children. Parents were asked if they were interested in their child's preparing for a professional career, a career which ordinarily requires graduation from a four-year college and frequently advanced professional degree training with superior scholarship as a requirement. Ninety-five per cent of the respondents did not respond to this item. Only 2 per cent responded in the affirmative. This seems an unrealistic response in view of the high per cents whose expectation is for their child to attend college and the certainty with which parents felt that they would have their children attend.[1]

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[1] The investigator believes that the format of the questionnaire was such that this particular item was overlooked by many, an unfortunate consequence of not taking time to field test the questionnaire in the pressure of time to complete the study. The item appeared at the bottom of a page immediately following an extensive listing of middle manpower types of training.

Extent of Interest in a Community Junior College. Having explored a number of related questions, all of which have contributed significant information in the preceding pages, the questionnaire then asked respondents a most significant question. It was, "If there were to be a junior college in this county in the next few years, how certain are you that one or more of your children would attend it?" Results are presented in Table 73.

TABLE 73

PARENTS' OPINIONS ON SENDING THEIR CHILDREN
TO A JUNIOR COLLEGE
BY SEX OF CHILD

Levels of Certainty	Per cent of Parents		
	Boys	Girls	Both
Very Certain to Attend	20	25	23
Probably Will Attend	37	31	34
Uncertain	26	28	27
Probably Will Not Attend	9	8	9
Quite Certain Not to Attend	4	4	4
No Answer	3	3	3

It is difficult to interpret the meaning of these data. The results in Table 70 show that 47 per cent of the parents in the sample are "definitely" planning on their child attending college. Data in Table 73 indicate that 23 per cent of the group would "certainly" send their children to a community junior college. Experience has shown that in areas where there are junior colleges, the junior college equated enrollment approximates 20-25 per cent of the enrollment totals in grades 9-12. The per cent obtained here falls near the middle of this range, giving some indication of realistic and valid results. If the "certain" and "probable" responses are added, however, a total of 57 per cent is obtained. This seems unreasonably high. It is of interest to note that a higher percentage of parents indicated "probable" attendance at a local junior college (34 per cent in Table 73) than indicated "probable" attendance at just any college in general (29 per cent in Table 70).

Considering the question from the negative standpoint, it is to be noted that only 13 per cent of parents definitely ruled out community junior college attendance for their children. The large percentages in "probable" and "uncertain" categories indicate a "wait-and-see" attitude on the part of about 61 per cent of the parents in the group contacted. The 61 per cent of respondents indicating "uncertain" and "probable" levels of certainty may seem high. However, in communities where junior colleges have been established for a long time, and where there is a wide diversity of curricular offerings covering several occupational education fields as well as academic work for transfer purposes, it is not at all unusual to find 50 to 60 per cent of the high school graduates in a given year enrolling as freshmen in the junior college in the September following high school graduation. These percentages are not attained, however, until the junior college has "proved itself" by providing quality programs in both occupational and transfer areas of education. With 47 per cent of youth expecting to attend the University of Arizona presently, and allowing for some of them to be attracted to a junior college, this percentage seems high. The 23 per cent of parents indicating definite certainty would seem to be more nearly the per cent which would be attracted or encouraged by parents to attend a junior college, although some of the uncertain and probable ones would be too.

Responses were analyzed according to education level of the mother and father to determine what relationship might exist between certainty that a child would attend junior college and parents' education. These data appear in Table 74.

TABLE 74

CERTAINTY OF PARENTS THEIR CHILD WOULD ATTEND A JUNIOR COLLEGE IN PIMA COUNTY BY LEVEL OF EDUCATION ATTAINED

Highest Level of Parental Education	Per cent By Certainty of Junior College Very Certain to Attend	Probable	Uncertain	Prob. Not	Certain Not to
Mother:					
Elementary School	20	37	28	6	3
High School Graduate	25	35	30	6	2
Some College	25	36	21	10	6
College Graduate	15	22	28	18	16
Father:					
Elementary School	22	39	27	6	2
High School Graduate	25	35	28	6	2
Some College	25	31	26	9	5
College Graduate	17	30	24	15	12

Under degrees of certainty which parents expressed about their children attending a junior college, are given the per cents of parents with different levels of educational attainment. For example, it can be seen that of mothers with an elementary school education, 20 per cent were very certain their children would attend a junior college, 37 per cent thought they would probably attend, 28 per cent were uncertain, 6 per cent thought they would probably not attend, and 3 per cent were quite certain they would not attend. The rest of Table 74 is to be interpreted likewise. Observing data in Table 74, it is possible to ascertain that parents who have had some college or are college graduates are less certain that their children would attend a junior college than parents with less education. Generally, research has shown that public junior colleges tend to draw students more heavily from the middle and lower income groups in a community. Income tends to be positively related to level of education in the population. These data, then, portray a picture which is consistent with research findings of what actually tends to happen in areas where they are in operation. In terms of these types of expectations, the public junior college as an institution tends to be a democratizing agency in providing greater equality of educational opportunity to all.

The Extent of Financial Planning for College Attendance. Two purposes were intended in asking for information about financial planning for college attendance. First, it was desired to check this information against the "planning" which parents indicated they were doing for the further education of their child as revealed in Tables 67 and 70. The purpose was to determine what degree of realism might have entered into the responses on which those tables are based. A secondary purpose was to get parents to realize the necessity for fiscal planning for the college education of their children by being asked such questions. The question asked parents to "describe the current status of their planning for the financing of the college education" of their children. Current average tuition costs at various kinds of colleges were given to assist parents in "coming to grips" with this issue. Results are given in Table 75.

As can be seen, parents of 21 and 22 per cents of boys and girls respectively have no plans at present for their college education. Parents of 20 and 23 per cents of boys and girls respectively indicate a definite educational savings program. Thirty-eight per cent of all parents indicated that they plan to help their child work his way through college expenses. The results are not very encouraging. Only one set of parents in five is *really* "planning" on sending their child to college, in spite of the data from

TABLE 75

CURRENT STATUS OF FINANCIAL PLANNING FOR CHILDREN'S COLLEGE EDUCATION

Kinds of Financing Plans of Parents	Per cent of Parents By Sex of Child		
	Boys	Girls	Both
No Plan at Present	21	22	22
Leaving it up to the Child	7	10	8
Definite Educational Savings Program	20	23	22
Will Help Child Work Way Through	43	34	38
Expect Child to Win Scholarship	1	2	1
(Armed Forces) Expect Government to Pay	1	-	1
Other	3	3	3
No Answer	4	5	5

Table 67, which indicated that some 96 per cent planned on either two years of four years of college for their fifth grade child. However, the picture is not as bad as may seem at first when it is determined that parents of 60 per cent either have definite savings plans or intend to help the child work his way through. In fact, some would contend there is merit in expecting the child to help earn part of his way. After all, it is the unusual parent (or wealthy one) who can realistically plan his family budget to have enough money saved up to defray the college expenses of all his children.

Responses about financial planning were analyzed according to level of education which parents possessed. It was found that about the same per cent of parents, regardless of educational level they had attained, indicated they planned to help their child work his way through college. Small but higher per cents of parents of less education expected the child to get his education at government expense, and about the same per cents expected the child to win a scholarship regardless of education level. Markedly higher per cents of parents with less education either had no plan at present or were leaving further education up to the child. The outstanding difference associated with educational level of parents was in regard to the existence of an educational savings plan. There was a direct relationship between the existence of a plan and the educational level of the parent. Ten per cent of the fathers and 13 per cent of the mothers with an elementary school education indicated the existence of such a plan, compared to 35 per cent of parents who had college degrees.

Financial planning was also studied in relationship to whether the parent had an interest in his child preparing for a skilled trade. Of those who had such interest, higher per cents than those not having such an interest had no plan, were leaving it up to the child, expected to help the child work his way or to win a scholarship or receive armed forces schooling. Fewer had definite financial savings plans.

Extent of Interest in Evening Programs of Education for Adults. One of the recognized functions of junior colleges is to provide specialized occupational education and general education for the adults of the community. Some of this work may carry "college credit"; other courses are offered solely for the purpose of job training or job up-grading. Many junior colleges are participating actively in the Federally supported programs in manpower development and re-training which help the unemployed to acquire a higher level of skill or a completely new skill in order to become once more participating members of the labor force.

The sample of population for fifth grade parents was asked to indicate what additional education they would be interested in if a junior college were located in the county. It was assumed that such offerings would not duplicate or supplant those which currently are available through the public schools. Results are presented in Table 76.

TABLE 76

PARENT INTEREST IN ADULT EDUCATION

Reasons for Interest in Adult Education	Per cent of Parents by Sex	
	Fathers	Mothers
Want Courses for Job Improvement	29	31
Want Courses to Apply to College Degree	9	14
Want Courses for Self Improvement	31	15
Other Reasons	15	28
No Answer	12	7
No Interest at all	3	6

From Table 76 it can be seen that about three of every ten fathers and mothers indicated interest in courses for job improvement. Nine per cent of the fathers and 14 per cent of the mothers would be interested in courses that would apply to a college degree (transfer type of work). Thirty-one per cent of the fathers and 15 per cent of the mothers would be interested in adult education offerings for just self-improvement. Twenty-eight per cent of the mothers and 15 per cent of the fathers would be interested for another reason, and 13 and 15 per cents respectively either did not respond or expressed no interest at all. These data were analyzed according to educational level attained by parents to determine if parents with various previous educational backgrounds would be interested for different reasons. These data appear in Table 77. From Table 77 it can be seen that

TABLE 77

LEVEL OF PRESENT EDUCATION AND ADDITIONAL INTEREST IN EDUCATION BY PER CENT OF RESPONSE*

Additional Education of Interest	Level of Education Completed							
	Father				Mother			
	Elem Sch.	H.S. Grad	Some Col.	Col. Grad	Elem Sch.	H.S. Grad	Some Col.	Col. Grad
None	35	31	16	34	39	33	17	30
Work on a College Degree	4	8	25	4	4	11	30	15
Courses for Job Improvement	35	36	34	18	20	16	14	9
Courses for Self-Improvement	11	13	14	25	26	30	30	21
Other	1	2	2	11	4	3	7	21
No Response	14	9	9	8	7	8	2	4

of fathers with an elementary school education, 35 per cent expressed no interest in adult education, 4 per cent indicated interest in courses that would apply on a college degree, 35 per cent would be interested in courses for job improvement, and 11 per cent would be interested in courses for self-improvement. It is interesting to note that of fathers and mothers respectively with some college work, 25 and 30 per cents expressed interest in additional work toward a college degree. A fourth of the fathers and over a fifth of mothers with a college education expressed interest in courses for self-improvement. Regardless of previous educational attainment, these data indicate that parents would have some interest in appropriate types of adult education offerings.

Summary and Conclusions. Data presented in this chapter seem to warrant the following summary statements and conclusions:

1. A high degree of population stability was found to exist among parents of fifth graders, and most work in Pima County where they live.
2. About a fifth of parents were non-high school graduates, and 37 per cent of the fathers and 29 per cent of the mothers reported having some college or being college graduates.
3. A fifth of the parents reported they were planning on their child completing high school; 9 per cent indicated a trade or vocational school; 61 per cent planned on a four-year college; 35 per cent planned for their child to complete a two-year junior college.
4. A positive relationship was found between level of parents' education and level planned for their child. As level of parents' education rises, the per cent expressing interest in their child completing a junior college or a trade or vocational school declines.
5. Nearly 9 of every 10 parents felt that everyone with ability to profit from college, regardless of financial means, should go to college. Only 6 per cent believe only those with superior academic ability or those with ability who can financially afford it should go to college.
6. Seventy-six per cent of parents indicated their child would definitely (47 per cent) or probably (29 per cent) attend college. (This compares to 77 per cent of seniors who indicated future plans definitely or probably included college.)
7. The higher the educational level of parents, the more certain they were that their child would attend college.
8. About 57 per cent of parents indicated that they would be interested in having their child prepare for a skilled trade. Higher per cents of parents with less education than those with more education were interested in their child preparing for a skilled trade. Forty-three per cent of parents who felt their child should prepare for a skilled

trade indicated junior college as the level of education planned for the child to complete.

9. Interests of parents in types of technical and semi-professional programs in which they would have their child study give clues to the need for programs in (1) accounting and business management, (2) electronic (and electrical) technology, (3) refrigeration and air conditioning, (4) medical and dental technologies, (5) music, (6) drafting, (7) nursing, (8) data processing, and (9) surveying.

10. Only two per cent of parents indicated interest in having their child enter a profession.

11. Of all parents, 23 per cent said that if there were a junior college in Pima County, they would be very certain their child would attend, and another 34 per cent thought their child "probably" would.

12. Twenty-two per cent of all parents reported no plan at present for financing their child's college education, 22 per cent reported a definite educational savings plan, and 38 per cent indicated they would help the child work his way through. The existence of a plan was associated with higher levels of parents' education.

13. Of all parents, 29 and 31 per cents of fathers and mothers respectively expressed present interest in courses for job improvement, and 31 and 15 per cents respectively expressed interest in courses for self-improvement purposes. Regardless of educational level attained, parents expressed interest in appropriate types of adult education offerings.

CHAPTER V

BUSINESS, INDUSTRIAL, AND GOVERNMENT EDUCATION NEEDS

This chapter is devoted to the reporting of a survey conducted to determine the characteristics of the business, industrial, and government labor force and the anticipated increase in this force in Pima County, Arizona. Through an analysis of the data gathered, the needs for programs of instruction in business, industry, and government education are outlined.

Since this report is a general survey, it is expected that in each case in which a training need is identified, a later depth report will be made to determine the exact programs and courses needed and under whose auspices they should be given. Because of the fair labor practice law, no attempt has been made to designate the sex or other identifiable characteristics of the existing or anticipated labor force.

A Survey of Pima County Employment Experiences and Demands

Earning a Living in Pima County. The existing types of business, industry, and government agencies determine how people earn their living today and to a significant extent indicate how they and new workers will earn their living in the immediate future.

Table 78 presents the data concerning business, industrial, and governmental agencies in Pima County, listed according to the number of employees in each agency, who co-operated by returning a questionnaire requesting information concerning their present plans for up-grading employees, and their opinions regarding the benefits a community college might have on personnel employed. A total of 665 questionnaires were distributed to business, industrial, and governmental agencies known to be in active operation and thought to employ over ten employees. Replies were not expected unless the enterprise receiving the questionnaire employed persons for whom post high school education and training were necessary or desired. Replies were received from 236, or 35 per cent, who employ 28,176 persons, or 35 per cent of the county's non-agricultural wage and salary workers. This response

TABLE 78

NUMBER OF BUSINESS, INDUSTRIAL, AND GOVERNMENTAL AGENCIES IN PIMA COUNTY BY NUMBER OF EMPLOYEES IN EACH AGENCY RETURNING QUESTIONNAIRES

Occupation Group	Business and Agencies by Number			
	Under 50 Employees	50 to 100 Employees	Over 100 Employees	Total Agencies
Advertising	4	-	-	4
Banking	3	2	4	9
Communication	6	-	2	8
Educational	5	2	6	13
Food, Drink, Dairy	20	5	4	29
Governmental	-	-	9	9
Hospital and Medical	6	1	4	11
Hotel and Motel	4	4	1	9
Industrial	4	2	2	8
Insurance	11	2	1	14
Investment-Finance	4	1	-	5
Manufacturing	23	4	4	31
Mining	1	-	2	3
Real Estate	3	2	1	6
Research	1	1	2	4
Retailing (non food)	8	3	7	18
Transportation	5	1	-	6
Utilities	4	-	2	6
Wholesaling	27	1	-	28
Other	-	6	9	15
Totals	139	37	60	236

from slightly more than one-third of the business, industrial, and governmental agencies in the community is atypically high, inasmuch as frequently such surveys poll 20 per cent or less. Nearly all the largest employers responded.

This percentage of return might be interpreted as indicating strong interest in the working agencies of the community in programs, plans, and hopes for continued increase in the educational level of employees. The number of responses by agencies in each class or employee-size grouping seems significant in that while the response from the group with less than fifty employees is by far the largest (which is normal since small firms and agencies are most numerous in any community), the next highest number of responses was from firms with over one hundred employees, the smallest group of firms. This high response from the fewest number of employers, who probably employ by far the majority of workers in the community, may be interpreted as an indication by large firms and employers that they are vitally interested in, and would welcome, efforts to improve the educational level of the labor pool of the community.

Present and Future Employment. Arizona's labor force is now more than 544,000. Tucson's labor force is nearly 100,000. Of this number, a large percentage are in occupations which require training beyond high school but do not require a college degree. Shown in Table 79 is a distribution of the labor force by per cent in each occupational category.

TABLE 79

COMPOSITION OF THE TUCSON LABOR FORCE

Occupational Group	Per Cent
Professional and Technical	15
Clerical	14
Managerial	11
Service	14
Sales	8
Skilled	16
Semi-skilled	14
Unskilled	6
Agricultural	2

Source: Student Guide to Tucson Labor Market.

Estimates of the Arizona State Employment Service indicate that during the present decade these occupational groups will expand from 80 to 100 per cent in Tucson and in the state of Arizona, as compared to an average expansion in the nation of about 45 per cent.[1]

Twenty occupations have been selected for study which require workers with several years of training but not a college degree to be fully qualified. These are listed in Table 80 in which is shown the 1960 employment number and the estimated net gain in the following ten-year period. The net gain does not include replacement or attrition figures but represents the minimum number of persons who must be trained to fill these occupations to meet expansion needs.

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[1] Manpower Challenge of the 60's.

TABLE 80[2]

EMPLOYMENT FIGURES AND ESTIMATES TEN YEAR GROWTH TUCSON, ARIZONA, AND UNITED STATES 1960

Occupation	Tucson		Arizona		U.S.	U.S.[4]
	1960 Emp.	Net Gain	1960 Emp.	Net Gain	1960 Emp.	Net Gain
Draftsman	300	250	1,600	1,400	234,000	100,000
Electronic Technician	120	100	600	1,250	INA[5]	INA
Medical and X-ray Technician	270	325	900	1,100	125,000	45,000
Photographer	100	25	400	525	60,000	INA
Licensed Practical Nurse	350	200[3]	1,400	800	221,000	INA
Programmer	60	120	200	400	40,000	40,000
Manager, Hotel and Motel	500	350	2,600	1,900	29,000	INA
Manager, Retail Stores	1,750	650	13,750	3,250	INA	INA
Bank Teller	250	150	1,200	700	INA	INA
Bookkeeper	1,000	720	5,000	3,600	1,000,000	[6]
Secretary	650	400	2,750	1,650	600,000	INA
Insurance Agent	600	440	2,800	2,200	325,000	INA
Wholesale Salesman	1,300	1,000	6,500	5,100	900,000	100,000
Farm Foreman	98	10	1,400	140	INA	INA
Surveyor	140	50	700	250	40,000	INA
Credit Manager	125	55	500	250	47,000	INA
Claim Adjuster	60	20	300	100	55,000	INA
Station Agent	110	10	550	50	30,000	INA
Real Estate Salesman	1,200	300	3,600	900	600,000	INA
Manufacturing Foreman	700	300	2,300	1,100	750,000	INA

[2] Arizona Occupational Outlook Handbook.

[3] Other sources place this net gain as high as 1,000.

[4] Estimated from Occupational Outlook Handbook, U. S. Department of Labor.

[5] Information Not Available.

[6] More than 50,000 openings per year.

It should also be noted that Tucson is not typically a manufacturing or heavy-industry community. Manufacturing comprises about 7 per cent of the Tucson work force, compared to 16 per cent in the state as a whole and 30 per cent nationally.

Table 81 contains an analysis of the total average employment for 1966 reported by the 236 Pima County firms and agencies who responded to the questionnaire. While these returns reflect only slightly more than a third of the employing agencies contacted, the returns are worthy of special study because they show especially those employment fields in which the employers expect increased labor demands within a short time and in which the available supply is inadequate. Analysis of these areas or fields where one may expect continued or additional demands for labor indicate that almost invariably they are in technical or semi-technical fields that may be taught either through on-the-job programs or through community junior college programs.

Part A of Table 81 pictures the average employment for 1966 and the anticipated increase in employment in these 236 firms and agencies, in the indicated skills or trades, by 1971. The most immediately noticeable fact is that in every classification except one (machine design), the employers of this community expect to be seeking increased numbers of semi-skilled or technically trained employees during the coming few years.

Part B of Table 81 is an "opinion sample," rather than a statistical presentation. The employers responding to the survey were invited to indicate whether they felt, at the present time, the labor supply of qualified employees in Pima County, in the indicated classifications, was scarce, adequate, or over-abundant. The opinions given by employers, and detailed in Part B, show clearly that Pima County today represents an unsaturated labor market; in fact, a business and industrial community in which many of those job-classifications shown are in short supply of labor potential. This composite opinion of 236 employers, when studied together with the information presented in Part A that they forsee a steady increased demand for skilled labor during the coming several years, pictures clearly the existent need within the community to plan some continuing program to produce skilled technicians of every type.

Before attention is turned from Table 81 it is interesting to note that the greatest need for employees, as foreseen by the 236 employers participating in the study, during the next few years will be in business and government

TABLE 81

AVERAGE EMPLOYMENT, ANTICIPATED INCREASE, AND ADEQUACY OF QUALIFIED EMPLOYEES IN PIMA COUNTY IN 1966

Classification of Employment	Part A Average 1966 Employment	 Anticipated Increase by 1971	Part B Companies Expressing Opinion Regarding Present Labor Supply Scarce	 Adequate	 Surplus
A. PRIMARILY INDUSTRIAL					
1. Aeronautic & Space	11	4	-	-	-
2. Air-Conditioning	39	5	5	2	-
3. Machine Design	1	-	-	-	-
4. Automotive	123	7	3	1	2
5. Civil & Highway	34	3	1	-	-
6. Chemical	33	8	4	2	-
7. Drafting	96	8	4	3	-
8. Electrical	21	5	4	-	-
9. Electronic	325	14	7	1	-
10. Industrial	129	8	2	3	-
11. Instrumentation	22	3	1	-	-
12. Mechanical	226	7	5	2	1
13. Metallurgical	24	3	1	-	-
14. Surveyors	29	1	1	-	-
15. Foremen	284	14	10	1	1
16. Other	60	-	2	3	1
B. PRIMARILY BUSINESS					
1. Accounting	417	45	27	44	2
2. Advertising	77	11	8	12	-
3. Transportation	126	32	2	8	-
4. Business Administration	132	26	11	16	-
5. Business Machines	110	17	13	15	-
6. Business Management	176	23	20	21	-
7. Elec. Data Processing	64	11	7	8	-
8. Marketing	102	5	7	7	-
9. Merchandising	130	16	13	6	-
10. R.E., Ins. & Fin.	159	67	4	7	-
11. Salesmanship	712	46	23	39	-

	12. Secretarial	729	43	21	56	-
	13. Photographic	6	4	2	1	-
	14. Programers	36	10	10	4	-
	15. Other	392	12	12	6	3
C.	PRIMARILY HOSPITAL AND MEDICAL					
	1. Medical	69	4	2	-	-
	2. Dental	2	-	-	1	-
	3. Nursing	278	4	3	1	-
	4. Pharmaceutical	-	1	-	-	-
	5. X-ray	19	2	3	-	-
	6. Laboratory	23	3	5	-	-
	7. Other	332	6	4	-	-
D.	PRIMARILY AGRICULTURE					
	1. Agriculture Prod.	2	-	-	1	-
	2. Food Processing	290	1	2	-	1
	3. Horticulture	9	-	1	1	-
	4. Landscape	148	2	2	3	2
	5. Animal Husbandry	-	-	-	-	-
	6. Foremen	10	-	-	1	-
	7. Other	12	-	1	-	-
E.	GOVERNMENT					
	1. Legal Secretary	23	3	1	2	-
	2. Acct. Clerk	88	5	-	8	-
	3. Senior Acct. Clerk	21	1	-	1	-
	4. Research Analyst	13	5	-	1	3
	5. Firefighter	282	3	1	2	-
	6. Police Officer	392	3	3	1	-
	7. Guard	58	4	1	3	-
	8. Elec. Data Processing	26	4	-	2	-
	9. Electronic Tech.	20	2	3	1	-
	10. Drafting	28	5	2	5	-
	11. Field Survey	102	2	1	2	-
	12. Forestry	-	-	-	-	-
	13. Interviewer	29	-	-	2	-
	14. Other	411	1	-	1	-
F.	PRIMARILY BUILDING TRADES					
	1. Architectural	46	4	3	3	-
	2. Electrical	47	5	3	4	1
	3. Carpentry	180	4	2	7	2
	4. Plumbing	54	4	3	5	1
	5. Masonry	12	2	1	4	1
	6. Painting	64	4	1	4	1
	7. Other	92	6	6	1	-

and in the science-related technological fields. Persons with adequate training and background in business and secretarial operations, and those with training and/or experience in science-engineering fields should experience little difficulty in finding employment in Pima County.

Correlating closely, but not perfectly, with this assumption are the opinions given by the 236 participating firms and agencies regarding the present labor supply. For the most part they indicated that at present there is a labor shortage in the clerical-secretarial fields and in the science related technologies.

The United States Employment office in Tucson reports that many of the skills in demand by manufacturing industries require training beyond high school. In industrial areas, some of this training would be offered in an on-the-job training situation. However, in Tucson this opportunity is not readily available. If a reasonable number of Tucson's youth is to be permitted a maximum occupational choice, skill training must be offered here in the community beyond the high school level. This would permit each young person to attain a marketable degree of skill before leaving the relative convenience of home and community to seek work elsewhere. This situation applies to other occupational areas as well.

Listed below are occupations of relatively high demand in which some kind of specialized or skill training, beyond the high school level, would be of material assistance to the youthful job seeker in becoming more employable in the competitive national labor market.

Firemen
Policemen
Office skills
Machine shop skills
Radio and TV Repairmen
Furniture Repairmen
Dental Technicians
Sheet-Metal Workers
Upholsterers
Appliance Servicemen
Construction crafts
Air-conditioning and Refrigeration Mechanics
Farm Equipment Mechanics
Diesel Mechanics
Barbers
Beauty Operators
Heavy Equipment Operators
Stationary Engineers
Ornamental Iron Workers

Employer Opinions on Types of Job Upgrading Education Needed

Introduction. Respondents were asked to indicate the types of educational offerings which a community college could provide to help adults upgrade job competencies. These offerings would supplement but not necessarily duplicate existing adult education programs offered in Pima County.

Respondents were asked to check from a list of 102 specific kinds of training that they believed would be helpful to their employees. Opportunity was provided for each to add other types of specific training which they felt would be helpful. Specific kinds of training were classified into fourteen major instructional areas which appear in Table 82.

TABLE 82

KINDS OF TRAINING OR EDUCATION DEEMED HELPFUL FOR EMPLOYEES IN THE OPINION'S OF 236 EMPLOYERS

Major Instructional Areas	Index of Demand By Per Cent
Air Conditioning and Refrigeration	6.8
Drafting	4.7
Metallurgy	3.0
Mechanics	5.1
Mathematics	8.6
Electricity - Electronics	4.7
Agriculture	2.3
Mining	1.0
Hydraulics	5.3
Hospital and Medical	2.7
Business	17.2
Building Industry	4.5
General	10.1
Supervisory Training	27.0

The incidence of responses indicating need for one or more specific courses within the respective areas is shown. Index of demand was computed by determining what per cent the number of responses in an instructional area were of the total number possible, provided each respondent had indicated need on each item within the area. For example, there were four specific types of training listed under the instructional area of air conditioning and refrigeration. If all 236 respondents had indicated need on each of the four specific types of training within this instructional area, there would have been 940 responses possible. Since there were only 63 incidences of need, this represented 6.7 per cent of the total possible. These data reveal the highest incidence of need in supervisory training and business. Need for upgrading work for adults was also indicated in general education(primarily communications and human relations), mathematics, air conditioning and refrigeration, hydraulics, mechanics, drafting, and electricity-electronics in that order. Other areas were building industry trades, metallurgy, health sciences, and agriculture. Each of the instructional areas is analyzed below, and the implications given in terms of course selection for a technical and semi-professional education program are discussed for most areas.

1. Supervisory Training

Evidence of the need for supervisory training in terms of its usefulness for upgrading adults ranked first among respondents. Because 27 per cent of all firms indicated this type of training as being helpful to employees, it is recommended that consideration be given to these programs in the over-all planning. Tabulation of the interests of respondents for this type of training are shown below with the number of different firms given in the parenthesis:

Supervisory Training	-- Administrative Personnel	(72)
	-- Foreman Training	(56)

It is suggested a special classroom for supervisory training programs be included in the planning of physical facilities. This room should be designed so it lends itself to the use of conference techniques. It should contain those teaching aids and physical features which will enable effective presentation of the subject and give experience to students in developing effective techniques and practices. Supervisory training at both the foreman and higher administrative levels is requested for their personnel primarily by the medium size and larger businesses and industries.

2. Business

Employers were asked to indicate which of twenty-three specific types of business training would be helpful for their employees. They also were afforded opportunity to add any types not included in the listing. Specific business subjects were identified a total of 938 times by most employers suggesting one or more of them. In order of frequency with which employers indicated specific kinds of business training were the types of training shown in Table 83. It can be seen that interest was greatest in (10 salesmanship, (2) accounting-bookkeeping, (3) operations and management, (4) typewriting, (5) stenography, (6) business machines, and (7) business methods and systems. One of the greatest demands for course work was in the area of business. This is to be expected, for business-trained employees are hired not only in the so-called businesses themselves, but in all other occupational areas as well, such as mining, manufacturing, and agriculture.

TABLE 83

KINDS OF BUSINESS TRAINING SUGGESTED BY EMPLOYERS FOR JOB UPGRADING OF EMPLOYEES

Business Subjects	Number of Employees
Salesmanship	88
Accounting-Bookkeeping	88
Operations & Management	72
Typewriting	72
Stenography	63
Business Machines	49
Business Methods & Systems	45
Advertising & Display	45
Retailing	42
Data Processing & Programming	42
Marketing	41
Economics of Business	39
Purchasing	37
Insurance	33
Introduction to Business	29
Statistics	29
Key Punch Operators	26
Tax Accounting	24
Mathematics of Finance	18
Money & Banking	20
Real Estate	15
Small Business Management	14
Investments	10

3. General Subjects

Third in order of demand were various general education subjects. The interest in these subjects as indicated by employers is shown in Table 84. It can be seen that the area of communications including spelling, speech, grammar, speed reading, and report writing elicited the greatest amount of interest. The area of next greatest interest was applied psychology, with food selection and preparation next in order. To best serve practical employer needs, courses in chemistry and advanced mathematics should emphasize applications.

TABLE 84

KINDS OF GENERAL SUBJECTS SUGGESTED BY EMPLOYERS FOR JOB UPGRADING OF EMPLOYEES

Subject	Number of Employers
Communications (Speech, Grammar)	67
Human Relations (Applied Psychology)	55
Report Writing	49
Spelling	39
Food Selection and Preparation	28
Speed Reading	25
Social Sciences	19
Humanities	18
Foreign Language	17
Chemistry, General and Applied	17
Photography	16
Advanced Mathematics	14
Surveying	11
Fine Arts	7
Technical Physics	3

4. Mathematics

Next in order of demand were courses in mathematics. The number of firms indicating different subjects as being useful for job upgrading purposes is shown in parenthesis following each listing as follows:

Basic Mathematics	(31)	Technical Mathematics	(17)
Applied Business	(30)	Geometry and Trig.	(10)
Slide Rule	(18)		

The demand in mathematics follows the general pattern of courses normally offered in community junior colleges. A community college in Pima County designed to serve the area should provide courses specified in this group. They should be designed to teach the practical application of mathematics rather than as college mathematics preliminary to more advanced courses in mathematics. Classrooms for these subjects should be designed to foster such a goal. This field of instruction was considered of interest by firms of all sizes.

5. Air Conditioning and Refrigeration

In this area the following indications of interest were given:

Equipment Servicing	(32)	Air conditioning and refrigeration theory	(12)
Design and Installation of systems	(13)	Sheet metal duct work	(9)

The greatest interest is in equipment servicing which seems expected in terms of the extensive use of such systems in the Pima County area. Adequate instructional space will need to be provided for the practical laboratory type work necessitated by programs in this area.

Companies employing over one hundred and those employing less than fifty were the ones that expressed the greatest need for courses in this area.

6. Hydraulics

With the development of automated machinery, the demand for hydraulic control equipment has increased to the stage where properly trained mechanics and technicians are needed to operate, maintain, and repair this type of equipment. Responses of employers for specific courses in the area are listed below showing the number of firms in parenthesis. The major portion of the requests for the hydraulic courses were from industries employing over one hundred persons.

Pumps, valves, controls	(18)
Equipment & Maintenance	(17)
Hydraulic Fundamentals	(13)
Circuits	(6)

It is suggested that further information be obtained from the employers of the county using hydraulic equipment as to what specifically is needed. Plans should include provision for equipment, shop facilities, and classrooms to teach this subject.

7. Mechanics

The major interest in this field was automotive service repair which was mentioned by thirty-one respondents. Two and three respondents respectively mentioned diesel engine repair and aircraft repair.

8. Drafting and Blueprint Reading

The next field of instruction employers deemed useful was drafting. Interest in specific courses was as follows:

Blueprint Reading	(24)	Advanced Mechanical	(9)
Elementary Drafting	(22)	Plant Layout	(6)
Architectural Drafting	(12)	Detailing, Machine & Tool	(6)
Design	(10)	Tool & Die Design	(4)

Services to industry, business, or government in offering these courses could be provided through the use of one or two drafting rooms. As drafting is a basic subject applicable to many types of firms, further study of the exact needs for these courses is recommended before facility specifications housing the program are drawn. Courses in drafting were primarily requested by companies employing over one hundred persons with some demand in the companies employing fifty to one hundred persons.

9. Electricity Electronics

The provision of instruction in this area will entail the construction of special shops and classrooms. However, use may be made of existing technical level instructional spaces and facilities. The pattern frequently followed is to have one shop designed to cover instruction in all areas of electronics and another to provide facilities for the study and maintenance of the type of electrical equipment most frequently found in local establishments. Indications of need for instruction in this area for job upgrading purposes are shown in Table 85.

TABLE 85

KINDS OF TRAINING IN ELECTRICITY-ELECTRONICS SUGGESTED BY EMPLOYERS FOR JOB UPGRADING OF EMPLOYEES

Subject	Number of Employees
Basic Electronics	25
Electrical Equipment Maintenance	23
DC and AC Fundamentals	22
Instrumentation	15
Communications Electronics	15
Electronic Equipment Service	13
Industrial Electronic Controls	14
Transformers, Alternators, Controllers	13
TV and Radio Repair	11
Tubes and Transistor Circuits	11
Design of Automated Systems	8
Computer Servicing	9
Electro-magnetic Control	9
Thermometry and Pyrometry	7

It would appear that offerings in basic electronics, electrical equipment maintenance, DC and AC fundamentals, instrumentation, electronic equipment service, and communications electronics would be appropriate for job upgrading purposes. The most interest seems to place an emphasis upon electrical and electronic equipment servicing. For the number of companies engaged in electrical and electronic related work, the larger ones seem to require that an unusual number of courses be available to present and future employees.

10. Other Areas

In agriculture, the major interest expressed was landscape gardening (eleven respondents). Three each mentioned animal husbandry and horticulture. Five indicated food processing. In the mining area, the subjects of surveying and geology were indicated by two and three respondents respectively. One mentioned explosives and detonators, and three mentioned heavy equipment operators.

The building industry was consistent for those in the fifty-to-one-hundred and one-hundred-and-over employee groups in their course requests. That is, requests for courses in the various building trades such as electrical (11), plumbing (10), masonry (10), painging (9), and carpentry (13) approximately equalled each other. Although the college might offer some related apprenticeship training for these trades as they do in some areas of the midwest, it is unlikely it would offer pre-service instruction in these trades.

The primary interest in the area of metallurgy was upon welding, both electric arc and acetylene. Eight respondents expressed interest in structural steel and concrete, and seven mentioned Heliarc welding. Heat treatment and foundry practice were cited by four and three respondents respectively. Interest was primarily from companies employing one hundred or more. Job upgrading courses in medical technology, practical nursing, X-ray technology, laboratory technology, and dental technology were also cited as needed.

A large number of areas and courses were listed in a section of the questionnaire labeled "other." However, a tabulation of these produced very few that were of concern to more than one business or industry. There were not any that were listed frequently. Therefore, the conclusion has been drawn that although the items listed are problem areas for a few industries, they are not of encugh general concern to warrant organizing specialized courses at this time.

11. Health Sciences -- Technologies

A detailed report compiled by the members of the committee who are members of the medical profession reports the situation as related below.

The National Average, published by the American Hospital Association, of the number of personnel required for the support of each authorized bed in a hospital varies between 2.5 and 3.5 persons per bed. Of this figure 1 to 1.5 persons are classified as professional, technical and/or para-medical personnel that require at least two years of college work in their special field. For the purpose of this study the average of 3 persons per each authorized bed in the Pima County area will be used. One and five-tenths persons will be considered in the junior college or community college program training category. Further, the national average of the number of personnel required for each authorized bed in the extended care facility (nursing home) is .07 persons per bed, and of this figure .04 persons are of the classification of those requiring at least a two-year college program. In the Pima County area the following hospitals and medical facilities are in operation with an authorized bed capacity as listed:

General Hospitals	City	Authorized Bed Capacity
PHS Indian Hospital	Sells	56
Pima County General Hospital	Tucson	88
St. Joseph's Hospital	Tucson	238
Southern Pacific Memorial Hosp.	Tucson	115
Tucson General Hospital	Tucson	141
Tucson Medical Center	Tucson	419
St. Mary's Hospital	Tucson	269
		Total 1,326

Federal Hospitals	City	Authorized Bed Capacity
Veterans Hospital	Tucson	402
DMAFB Hospital	Tucson	65
		Total 467

Long-Term Care Hospitals	City	Authorized Bed Capacity
Arizona State Elks Hospital	Tucson	52

Special Hospitals	City		Authorized Bed Capacity
Palo Verde Hospital	Tucson		30
Oshrin Hospital	Tucson		99
		Total	129
Total Hospital Beds			1,974

Extended Care Facilities (nursing homes)	Total Bed Capacity
18 Facilities, all located in Tucson	942

Utilizing the above stated capacities, and the average number of personnel per bed, the following requirements are found:

Hospital Beds	Personnel Per Bed	Total Personnel Requirements
1,974	3	5,922

Hospital Beds	Personnel Per Bed	Two Year College Personnel Requirement
1,974	1.5	2,961

Nursing Home Beds	Personnel Per Bed	Total Personnel Requirements
942	.07	659

Nursing Home Beds	Personnel Per Bed	Two Year College Personnel Requirement
942	.06	377

These computations mean the hospital and medical facilities alone required a total of 6,581 personnel of all categories and of this total, 3,338 must have at least two years of college. If a conservative estimate of 50 per cent turnover is used, a need of 1,669 junior college or community college graduated annually is found just to maintain the present day status. Further, the University of Arizona is planning a Teaching Hospital of approximately 350-bed capacity to be built with the Medical School. By using the average employees per bed, an additional need of 1,050 personnel of all categories is found, and of this figure, 525 will have to have at least two years of college. The Tucson Medical Center is now drawing plans to increase their bed capacity by approximately 157 beds, requiring additional college graduate employees of 236.

In summary, it is found that 2,430 junior college or community college graduates will be needed annually, in the specialty fields to support hospitals and medical facilities now in operation and those known to be planned for the near future. These statistics do not take into consideration those addition junior college or community college graduates needed by the other allied medical professional needs, such as doctor's offices, clinics, and laboratories. These estimates of need do not take into consideration the number of trained personnel which will be necessary to give home care services under Medi-care.

Employer Practices and Attitudes Having Implications for Program Development

Introduction. Data on the extent to which business, industry, and governmental agencies provide organized training programs and the nature of these programs were obtained. In addition, their opinions about post-high school educational needs and the adequacy of present preparation of employees are presented in this part of the study. Employer attitudes were assessed on several factors related to certain types of programs which could be offered by a community college.

Types of Training Programs Offered. Respondents were asked whether their firm conducted an organized training program, and if so, what type of program was being conducted. Slightly over 50 per cent of all firms responding revealed some type of training was provided. Three types listed most frequently were special training courses, vocational educational programs, and refund of tuition for work taken elsewhere. Employers were asked if additional two-year technical programs or general education as part of a community college would replace or supplement their training programs. A fifth thought so, 20 per cent indicated they could partially, but 21 per cent indicated they could not.

Placement and Use of Post-High School Trained Employees. Opinions of employers concerning placement of employees with two years of training beyond high school were sought. They were asked if employees having two years of training beyond the high school could replace or supplement some of the college graduates in their organization. Over 51 per cent thought they definitely could, 30 per cent indicated maybe they could, and 13 per cent that they definitely could not. Forty-five per cent of the respondents reported that two years of post high school training would be recognized in their organization for job advancement purposes. Thirty per cent would recognize such training for higher pay rates, and 60 per cent would recognize such training in initial selection of employees.

Extent to Which Existing Facilities Meet the Job Training Needs of Employees. Opinions were sought from employers on the extent to which existing educational facilities (including the public schools) in Pima County meet the off-the-job training needs of employees. Twenty-one per cent felt existing facilities were excellent, 46 per cent thought they were "fair", and 24 per cent indicated they were "poor." Seven out of ten respondents evaluated existing facilities as fair or poor. This would indicate that in the opinions of employers, there is considerable room for improvement. Interpreted another way, this indicates presence of need for additional facilities in the opinions of those responding.

Willingness to Cooperate Further. Respondents were asked if they would be interested in participating in further study or discussion at a later time concerning the need or advisability of developing additional two year terminal, technical, or semi-professional education programs of a type which a typical four year college or university does not offer. Thirty-five per cent indicated they would definitely be interested, 32 per cent said "perhaps" they would, and 22 per cent expressed no such interest. With over two-thirds of all respondents indicating they might or would definitely be interested, it appears that a desirable level of interest exists on the part of business, industrial, and governmental enterprises in Pima County to assist education in developing programs of appropriate types in following up on clues to program needs obtained in this part of the survey.

Summary and Conclusions. From data presented in this chapter, the following summary statements and conclusions seem warranted.

1. Out of a total of 665 questionnaires distributed to business, industry, and government agencies in Pima County, 236 or 35 per cent were returned. This shows a strong interest in the development of training programs. The results were higher than this for those employing over one hundred people, which means that they are well aware of the necessity of an organized post-high school educational program.

2. An interpretation of the general classification of the Tucson labor force indicates that approximately 65 per cent of the labor force fall into classifications that indicate that they could benefit from training beyond high school but do not require a college degree.

3. An estimate of the Arizona State Employment Service indicates that occupational groups in these classifications studied will nearly double in the next ten years, which will be approximately twice the growth expected nationally.

4. In every classification except one (machine design), employers expect to be seeking increased numbers of semi-skilled or technically trained employees during the next few years.

5. The opinions given by employers indicate that Pima County today represents an unsaturated labor market in the occupations studied. And that they also foresee a steadily increasing demand for skilled labor during the years ahead.

6. The greatest need for employees in the next few years will be in business, government, in the science related technological fields, and in the health sciences.

7. Many employers provide opportunities for additional training in their organization. Many of these believe that additional two-year college programs could supplement theirs, and some even believe that these new programs could replace theirs.

8. Many employers believe the existing programs do not meet the needs of their employees. Some also believe that two-year college programs could assist in reducing the demand for college graduates.

9. Of the broad area fields, business shows the greatest need for two-year college programs. Also, indicating a significant but not as great a need are medical technology, mathematics, electronics, and the building industry.

10. The anticipated increase in personnel in specific areas, in general, covers the same areas that are now in scarce supply, thus indicating some urgency in meeting these needs by developing the appropriate junior college programs.

11. A comparison of recommended courses for job upgrading purposes parallels, for the most part, the areas previously cited as now being in short supply, and growth occupations as well.

12. The areas that received the most recommendations in which to conduct courses are: Air conditioning and refrigerator servicing, blueprint reading, elementary drafting, automotive service repair, basic mathematics, applied business mathematics, electrical fundamentals, electrical equipment maintenance, basic electronics, business management, marketing, salesmanship,

retailing, advertising, introduction to business, insurance economics, data processing, statistics, key punch operating, business methods, bookkeeping, accounting, business machines, stenography, typewriting, purchasing, tax accounting, report writing, communications, spelling, speed reading, human relations, food preparation, food selection, supervisory training, laboratory technician, practical nursing, dental technician, medical technician, and X-ray technician.

13. Over two-thirds of the respondents indicated a definite or probable interest in participating further in discussions or studies to help educators develop post-high school educational programs of two years or less in duration which the typical four year institution does not offer.

CHAPTER VI

A STUDY OF SITE AND FACILITIES

Introduction

The objective of this section of the survey was to determine, on the basis of population to be served and various sociological and topological factors, the location of the community college and type of facilities needed. The steps taken to reach this objective were to study and determine criteria for site selection, evaluate potential site possibilities, and study the capital needs for housing a junior college program.

In pursuit of this objective, the sub-committee making this report decided upon certain limiting and controlling factors which directed the course of the study and survey. These basic criteria were:

1. The Pima County Junior College District is to be county-wide and location and facilities should best serve the entire county and not be centered on the urban population alone.

2. The costs of implementing the programs that are suggested by this Citizens' Survey must be recognized as strong restraints to the planning process. Any economies that would not jeopardize creation of facilities that would effectively serve the planned junior college district, should be realized. Simply stated, funds not necessary for site acquisitions or for buildings which were not completely essential, would be available for equipment and for implementing a more comprehensive curriculum during the crucial initial years of a junior college.

3. Effective realization of the fullest use of the college as a true community college requires consideration of the geographical relationship of the site to the areas of greatest concentration of governmental, industrial, and commercial activities. Training and education of technicians and skilled personnel should envision some interplay between the college and these important phases of the local economy.

4. For effective planning in the initial years, as well as for the future, the minimum site size to be considered should be 120 acres. Studies concluded or now in process in the various Arizona counties that have or are creating junior college districts indicate this as being the smallest size practical, and the trend now is to larger sites, wherever possible. Maximum flexibility of site planning, adequate parking, attractiveness of campus, and -- most important -- space for growth and added uses in the future dictate this approach.

These criteria caused the committee to reject certain sites on private land which, unfortunately, were not adequate to the demands of these basic criteria. However, careful consideration was given to each suggestion, and the committee wishes to thank those persons and organizations who suggested or offered these sites for consideration.

Site Selection

Background of Site Selection. In the selection of feasible sites for the Pima County Junior College, guidelines were found in the extensive studies made and actual experience noted in Maricopa, Graham, Yuma, and Cochise Counties since the enactment, in 1960 by the 24th Legislature, of statutes creating a state system for junior colleges in Arizona. Further background information was available from the junior college and community college systems across the United States. The basic criteria for site selection used in this survey have been extracted from these sources. Care has been taken, however, to modify these criteria to fit the particular conditions and problems of Pima County.

Pima County measured through its geographical center is 168 miles from east to west and some 66 miles from north to south. Its major population concentration of 300,000 is contained in the 600 square miles of the Tucson Urban Area near the northeast corner of the county. The only other sizeable center of population is Ajo with fewer than 8,000 inhabitants. Other smaller towns and localities to be considered are Marana and the Sahuarita-Continental Area, the latter giving evidence of some population growth resulting from the great mining activity in the area. All these are connected to Tucson by good roads and the farthest is no more than two and one-half hours traveling time by automobile to the population center (see Plate 1).

Since the community college is a county facility, it should serve the whole of Pima County as well as possible, with consideration given to the travel convenience of all residents of the county.

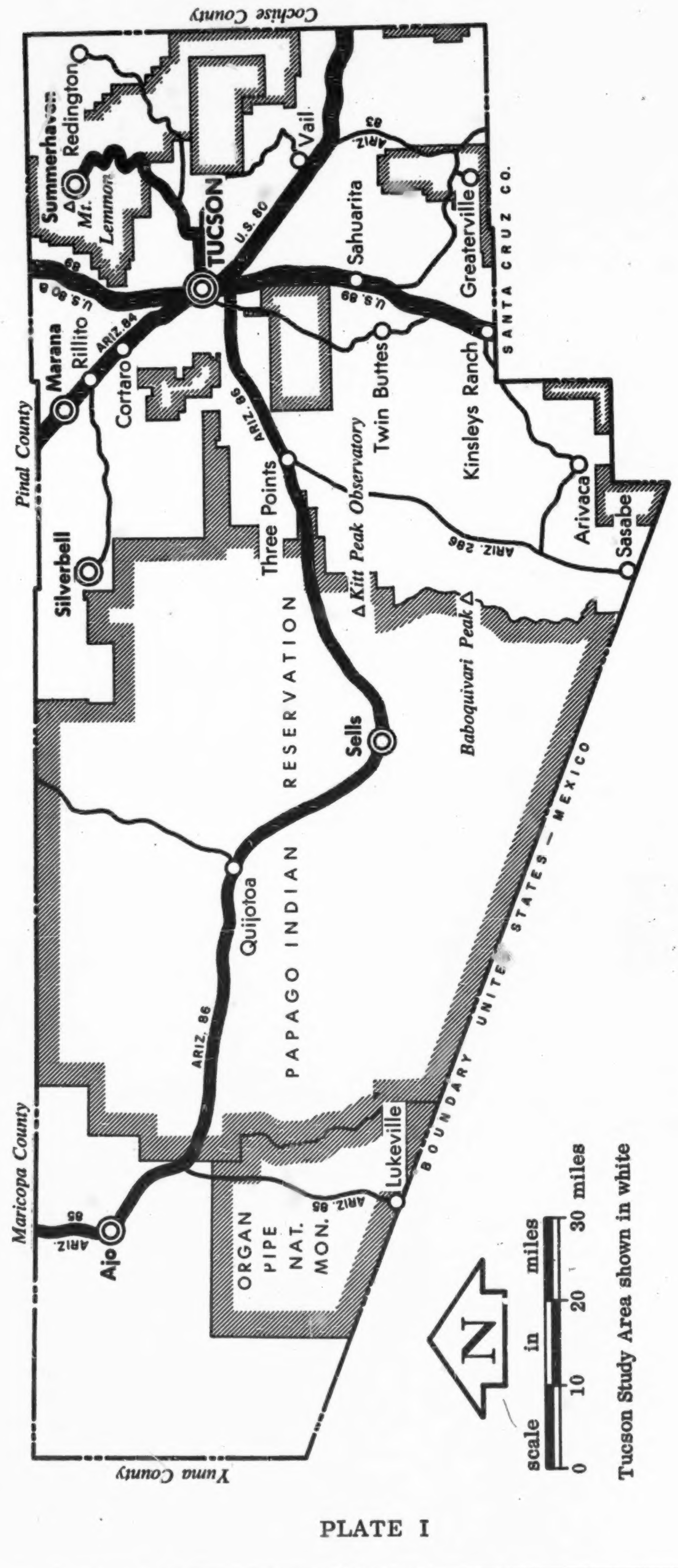
In addition to Pima County's population concentration being located in the Tucson Urban Area, the major governmental centers and services --Federal, State, County, and City -- are to be found in the central business district of Tucson. Major business and industrial areas are located along the axis of Interstate 10 which borders the central business district and passes near the Tucson International Airport. These locations would be expected to be both the source of employment for the future graduates of a local junior college and could also provide instructional and training assistance to the college.

For the purposes of this survey it was particularly fortunate that Pima County possesses one dominant population area which would provide the bulk of its prospective student body. The center of population for the county is located within the City of Tucson, at Waverly Street and Park Avenue, a short distance from the University of Arizona campus. The population center of the Tucson Urban Area is less than two miles distant at 10th Street and Treat Avenue. The geographical center of Pima County is located some 81 miles to the west of these points and in the center of Sells Indian Reservation. Our primary focus therefore was taken to be a mid-point between the two population centers indicated above. All of these factors have been used to relate the following basic criteria to the available sites.

A further and most important factor considered was the cost of raw land for these sites. For the purposes of a junior college, Federal land is obtainable at very minimal cost. State land, while it may be purchased at less than patented or deeded acreage, requires acquisition by commercial lease and sale by bid at a price consonant with appraised value. Since lands under these two classifications are still obtainable within reasonable distances from the population center (and therefore from the areas which would be expected to provide the bulk of the student population) the selection of sites was concentrated on Federal and States lands. It should be understood, however, that favorable offerings of private land may still be given consideration.

External Criteria for Site Selection. Those criteria which deal with the location and placement of a site within the County Junior College District are the "External Criteria," and as presented here they include notes and information relating them to the particular situation in Pima County:

1. The community college site should be located so that students, faculty, and participating people in the community need travel a minimum distance to the facility. Proximity to population and geographic centers of the district is of prime importance. For this survey, the geographic center of the county could not be given much weight since it is too remote from the population center (see Plate 1). The population center is found close to the University of Arizona Campus. (The Tucson Area Transportation Study, 1966, indicates this area as having the densest population by 1980.) As indicated


Cochise County
Pinal County
Maricopa County
Yuma County
SANTA CRUZ CO.
BOUNDARY UNITED STATES — MEXICO
Redington
Summerhaven
Mt. Lemmon
Vail
TUCSON
U.S. 80
U.S. 80
U.S. 89
U.S. 89
ARIZ. 83
ARIZ. 84
ARIZ. 86
ARIZ. 286
ARIZ. 85
Marana
Rillito
Cortaro
Sahuarita
Greaterville
Twin Buttes
Kinsleys Ranch
Three Points
Kitt Peak Observatory
Arivaca
Sasabe
Silverbell
Baboquivari Peak
Sells
PAPAGO INDIAN RESERVATION
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Lukeville
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N
scale in miles
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10
20
30 miles
Tucson Study Area shown in white

PLATE I

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in Plate 2, a central point was taken midway between the population center of Pima County and the population center of the Tucson Urban Area. Using this point, a series of concentric circles were drawn with radii of two, four, six, eight, and ten miles. These distances must, of course, be considered with the available and proposed roads and highways connecting the sites selected with the population concentrations. Additional factors that need consideration are convenience of access to urban services (i.e., retail establishments, medical and dental services, entertainment and recreation) and nearness to sources of research and information for students and faculty (libraries, University, local research facilities, governmental and business experts).

2. The site should be located so that surrounding land is available for future expansion. Although the optimum size of site for junior colleges is indicated by past experience to be 120-160 acres for a student body of 2,500 to 3,000, all indications point to the desirability of as large a site as possible, preferably an entire section of 640 acres to give maximum freedom to planning and future expansion.

3. It should be located so as to achieve maximum accessibility by well-surfaced roads.

4. It should be a sufficient distance from other educational institutions (i.e., a junior and senior high school sites) and industrial developments to avoid traffic congestion during periods of heavy vehicular movement.

5. The site should be located where water, electricity, sanitary disposal facilities, and public services exist or can be obtained at a reasonable cost.

6. A community junior college should be located amid surroundings that are attractive and pleasant and that generate feelings of pride and inspiration both for the student body and the community.

Internal Criteria for Site Selection. Internal criteria deal with the actual land parcels proposed as sites for a community junior college. As presented below, they include notes and information relative to the local situation:

1. Economic considerations.
   a. Basic raw land costs. Efforts to locate sites were concentrated first on Federal land obtainable at very minimal cost, secondly on State land where initial outlay,at least, would be minimal. The

general Tucson Urban Area is fortunate in still having a number of parcels which can be secured for the purpose of a junior college and which are within reasonable distance of the population center. Private land for a site of sufficient size was not indicated to be obtainable at a price low enough to overcome the differential in acquisition cost and be justifiable.

b. Existing structures (if any) and potential value. A survey of possible sites with existing useable structures was made, with negative results, by a highly competent realtor. It was concluded that a makeshift approach to the establishment of a junior college would prove more costly in the long run and result in an unsatisfactory facility.

c. Costs of land preparation and soil conditions or problems requiring special construction methods. Examination of sites to be considered was made with engineering and construction experts and is detailed in the discussion of individual sites in the following section. In general, larger sites have sufficient latitude as to building location to avoid unusual costs in land preparation. Top-soil conditions for landscaping was given a low priority since desert and adaptive types of landscaping have proved to be aesthetically acceptable in the area and are far more economical to maintain.

d. Drainage on and off site.

e. Availability of water, sewer, electric power, gas service, and telephone.

f. Fire and police protection facilities.

2. Site Characteristics.

a. As nearly square as possible to give maximum flexibility to planning site use.

b. Natural beauty and terrain consistent with local concepts.

c. A minimum of extreme grade changes. No sub-soil moisture or drainage problems.

d. Of adequate minimum size -- a minimum of 160 acres, preferably larger.

e. Free from transversal by any major public thoroughfare carrying vehicular traffic.

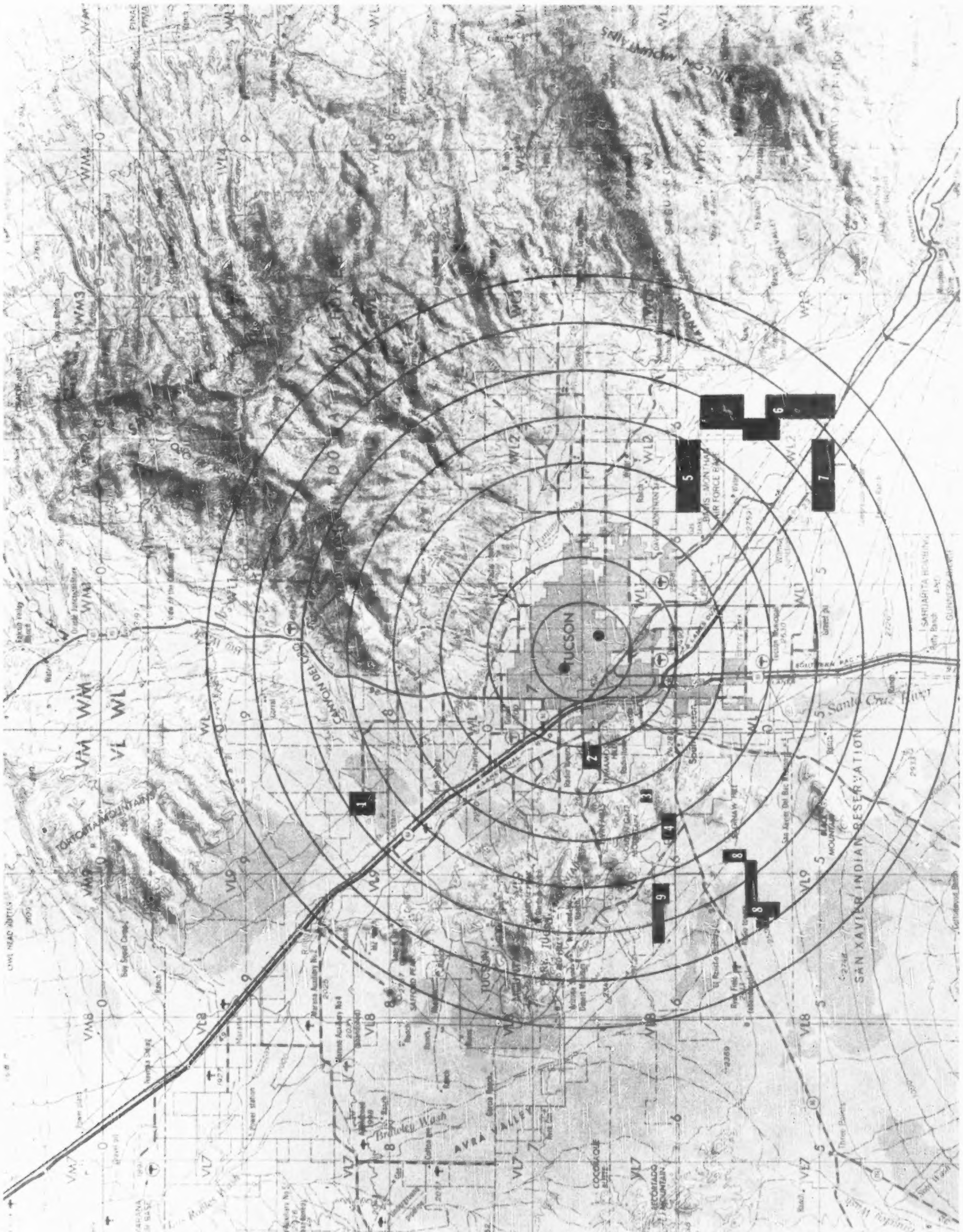
f. Minimum of two major points of egress and ingress and free from barriers such as railroads, or quarries segmenting the site.

3. Environmental Evaluations.

a. General character of area and zoning of compatible uses adjacent to the area.

b. Absence of undesirable features that may be preexistent and uncontrollable.

c. Absence of excessive noise, wind, dust, or odors.


TUCSON
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SAN XAVIER INDIAN RESERVATION
AVRA VALLEY
Santa Cruz River
DAVIS MONTHAN AIR FORCE BASE
TORTOLITA MOUNTAINS
RINCON MOUNTAINS
ALTAR VALLEY
COCOROQUE BUTTE
Brawley Wash
VM
VL
WM
WL
VL7
VL8
VL9
WL1
WL2
WM3
WM4

PLATE 2

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d. Absence of smoke, air pollution, or industry not compatible with the requirements of an educational institution.

4. Transportation.
   a. Public transportation. The area's public transportation is presently limited to two franchised bus lines. It appears feasible to have these lines extend to certain sites that are within a few miles of present routes if the daily passenger load is sufficient. Another possibility would be a bus operated by the Junior College District at a set fee.
   b. Private transportation. The use of private automobiles is expected to be the most common means of transportation. Plate 7, taken from the Tucson Area Transportation Study, indicated present and planned access and major roads and highways.

Sites Selected for Consideration. Numerous sites, both public and private, were considered in arriving at the listings in this section. While it is obvious that the perfect site to meet all criteria, particularly insofar as cost and availability, would be impossible to find, judgments had to be made in reducing the list to nine sites. The size of site required in an urban area precluded the listing of some sites. Negative factors such as too great distance, excessive price, surrounding nuisance or noise factors, hazardous conditions (flight pattern, bisection by high speed highway or railroad line, etc.) eliminated others.

The nine sites that were finally decided upon as feasible (see Plate 2) have certain characteristics in common. All are either Federal or State lands, and can be secured with nominal initial capital outlay. Federal sites can be purchased; State lands can be secured by lease until actual construction and use make title acquisition necessary. All sites are within reasonable distance from the population center in terms of elapsed time under normal traffic conditions, and all are so located as to be off main traffic routes and therefore less apt to generate traffic problems (see Plate 7). All have or can be readily served by necessary services and utilities. All sites are buildable.

The important decision now is the selection of one site which will best serve the initial years of the junior college. Projections of student enrollment for the junior college make it evident that planning now should envisage more than one site to make it possible to have junior colleges whose student body will be within limits indicated as optimum. A further benefit to be derived from planning for more than one location would be to serve individual areas of the Junior College District in the best manner possible with true community colleges.

Site 1. (See Plate 3.) Sec. 19, R13E, T12S less NE¼ to Marana School District and W½ of NW¼ to State of Arizona. Balance of 520 acres is Federal land available for a junior college site, subject only to the settlement of Supreme Court civil suit filed December 7, 1965 on a mining claim. The site is square except for the north corners. Topography is excellent -- it is fairly level with some local drainage throughout. Overton Road is paved to the border line of the site and connects by way of several other paved roads to the Florence Highway on the east. Thornydale Road, unpaved, makes connections through other routes to Interstate Highway 10, approximately three miles distant. Telephone service only, crosses the site. Electric power lines (light service) front the east section line. The site is under a private water company franchise. Gas and sewer service are approximately one and one-quarter miles from the area. Although it is eleven miles from the central population point, this site is in the area of anticipated growth of the Tucson Urban Area to the northwest. It has the natural beauty of setting to fit a fine campus. The major limitation is the mining claim litigation which is expected to require a year or more for the Bureau of Land Management to settle.

Site 2. (See Plate 3.) Section 9, less the S½ of the S½ and a small portion of Section 10 R13E, T14S, consists of 500 acres, rectangular except for a 20 acre projection at the NE corner within the Tucson City Limits. This is all Federal land, presently being used by the Tucson Rifle Club under an Executive Order dating from 1916. In order to make this available for junior college use, the Bureau of Land Management has offered to exchange this site for another more suitable for a rifle range. This site is bounded on three sides by paved roads giving direct access to the central business district, the freeway, and the population center. All services and utilities are to the site, with city water lines on three sides and city sewer on one. Electric and gas lines are on three sides of the property. Since the site borders on and extends into the Tucson city limits, the City of Tucson will, on request, extend its boundary to include this area, thereby making it possible to provide police and fire protection. This inclusion within the city would mean water at the in-city rate. The site is physically attractive, overlooking the central business district and the University of Arizona, and it is within one-half mile of a major hospital. The terrain is suitable for building. The west end of the land contains one drainageway. The remainder has no serious problems.

Site 3. (See Plate 3.) Section 19, R13E, T14S, E½ of S½. Consists of 160 acres of Federal land, ½ miles west of the present end of paving of 36th Street. This site contains within its hilly terrains a sheltered valley of approximately 120 acres of usable land. No utilities are at the site, but all are available within ½ mile of it. This site is within the City of Tucson Water Utility service area. Although it is close-in to the population center, it has two drawbacks: (1) Extension of paved access roads are made difficult by the surrounding terrain, and (2) future addition to the school site would not be feasible.

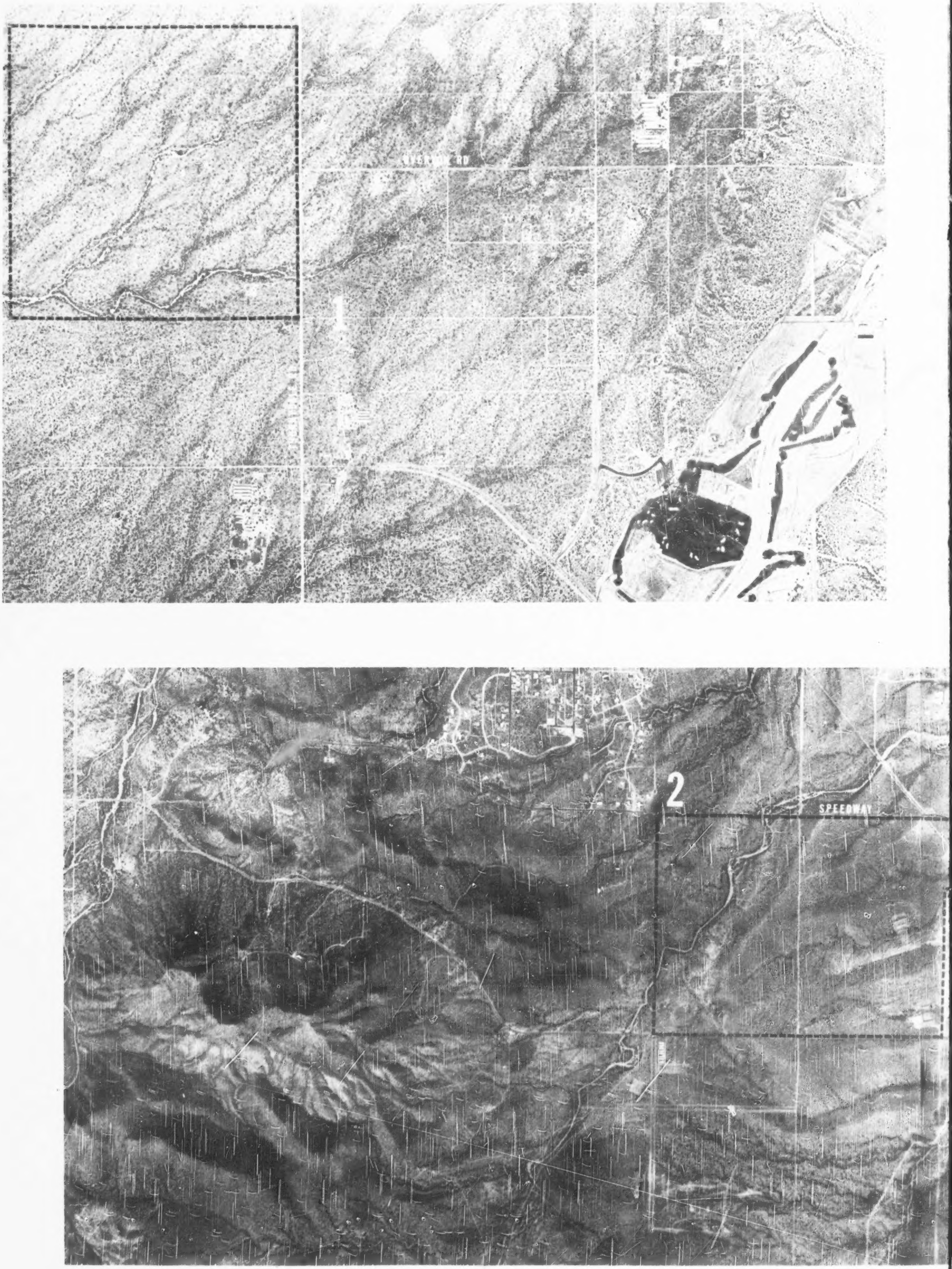
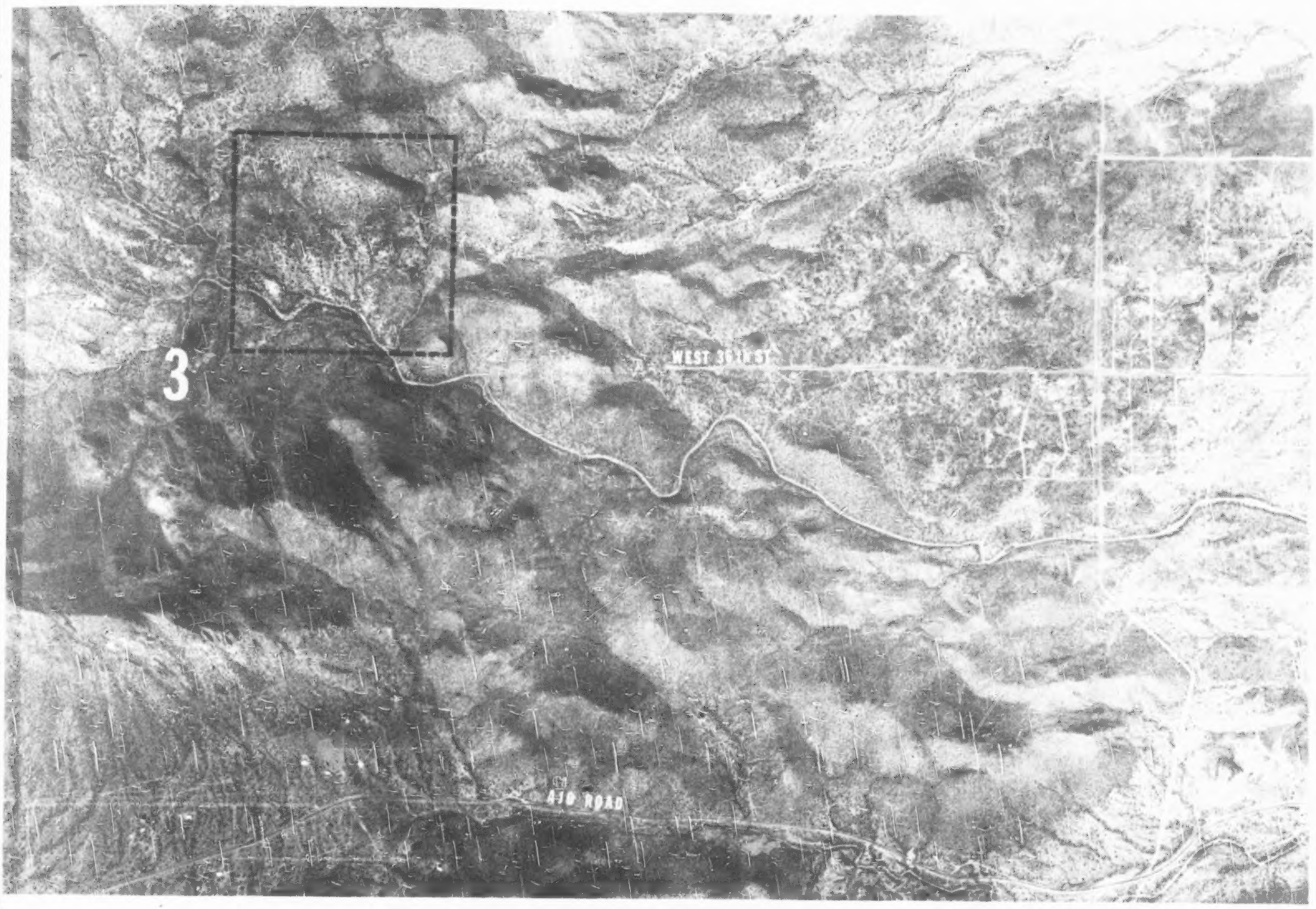

1
2
SPEEDWAY

PLATE 3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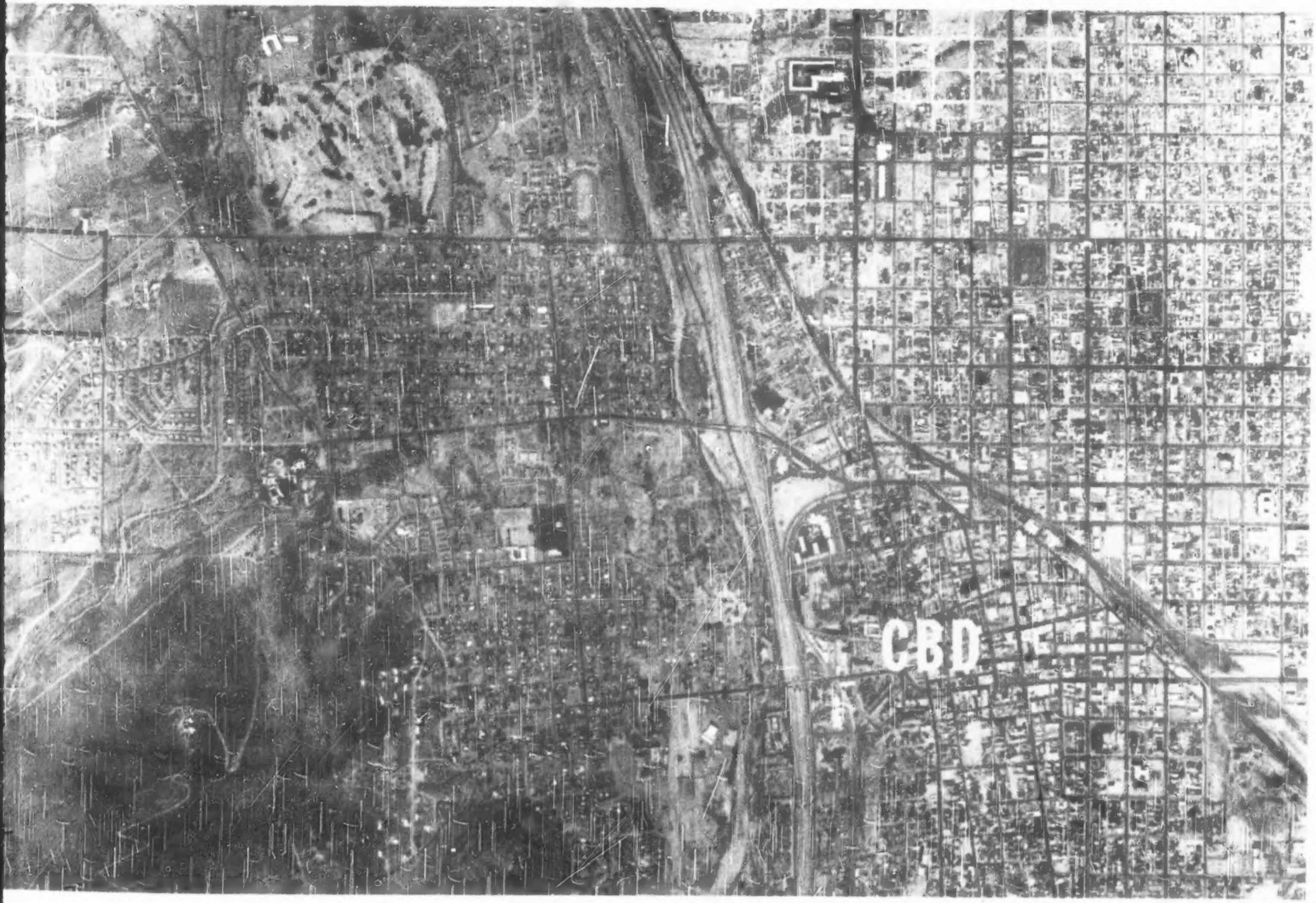
WEST 36TH ST
AJO ROAD


CBD

A planned new county road (Star Pass Trail) will connect this area to the center of Tucson.

Site 4. (See Plate 4.) S½ of Section 25, R12E, T14S, less the NE¼ of SW¼ to the City of Tucson Parks and Recreation Department. Consists of 280 acres of Federal land. This is an excellent site in terms of physical appearance and usability of land. Paved road access is excellent although limited to Ajo Road by way of Kinney Road. Ajo Road is now being improved and will make for quick and easy accessibility to the city as well as to other areas of the county. All utilities except sewage lines are available close by on Ajo Road.

Site 5. (See Plate 4.) Sections 32, 33, and 34, T14S, R15E. Consists of 3 full sections of State land. Of these sections, the westerly one bordering Davis-Monthan Air Base is quite level, but is cut by a deep drainage ditch from southwest to northeast. The other two sections contain some severe drainage areas. The northeast end of the land contains a large gravel mining operation. Despite these problems, there are several excellent sites that can be acquired from the large total acreage. There are no services or utilities to the site, but water can be supplied under a private franchise, and sewer, gas, and electricity can be readily extended to the area. Paved roads are not in to the site. This site closely adjoins the area of Tucson that has experienced the most rapid housing and population growth. The adjoining Air Base presents some hazard and nuisance factors, but proper placement within the site will minimize these. Accessibility to the west and south are limited by the Air Base, but the site is otherwise favorably located.

Sites 6 and 7. (See Plates 5 and 6.) Portions of Sections 2, 11 and Sections 14 and N½ Section 23, T15S, R15E. Sections 1, 12, 24, 25, 28, 33, and 34 are all state lands. These two sites are discussed together as they are in similar locations and have certain factors in common. Site 6 is bisected by Houghton Road which is paved throughout. Site 7 is bisected by the Tucson-Benson Highway. Both are large sites with considerable bad drainage areas and gravel and sand operations. Both have high cost factors in the appraisal values set by the State. Both lack public utilities, although extensions of service is feasible. Both, however, are extremely accessible by good roads and are not distant from the southeasterly expansion of Tucson. In both sites, it would be necessary to select a location from the large acreages after a study of existing mineral and industrial activities and elimination of the areas with serious topographical or hazardous factors.

Site 8. (See Plate 6.) W½ of Section 11 and the N½ of sections 15 and 16, T15S, R12E; south of Ajo Road, all but the northwest quarter of Section 17 and the northeast quarter of Section 20 are held by the State. This 1600 acres is approximately eleven miles from the population center. It is crossed by the extension of Valencia Road and is one mile south of Ajo

Road and within one-half mile of Bilby Road. The topography of the portions of sections 11, 15, and 16 are favorable for construction. The balance of the site is subject to considerable sheet flooding. Utilities are not present. The northern portion of the site has fair possibilities for water development, or water can be extended from Ajo Road. Other services can be similarly extended. While somewhat distant, travel time to the population center would not be excessive.

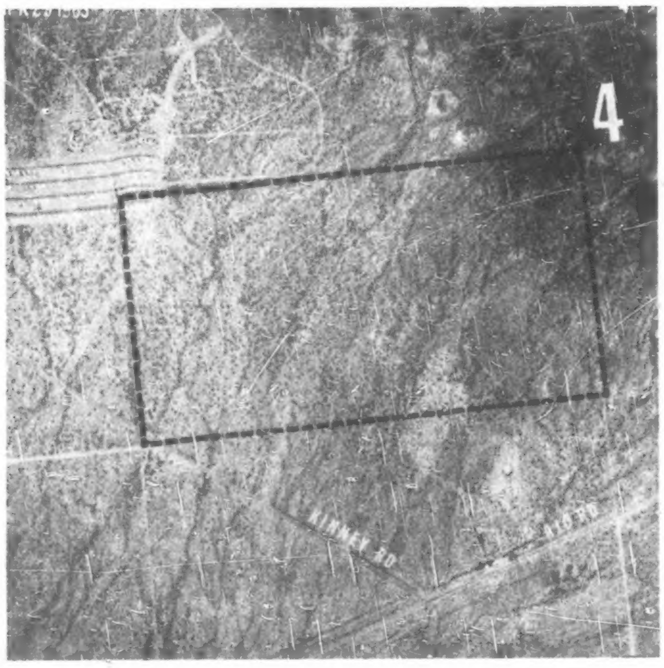
Site 9. (See Plate 6.) Parts Sections 28, 29, and 30-R12E, T14S. Located west of Kinney Road (Old Tucson Road), north of Bopp Road, adjoining south boundary of Tucson Mountain Park. Section 28-N½, N½ of SE¼, NE¼, of SW¼,N½. Section 29, and NE½ of the N½-Section 30. This 680 acres of Federal land is excellent property, topographically, and is highly suitable for construction. Entrance to the site is by a single paved road, but it lies close to two other roads, one of which is paved. All utilities are within less than one-half mile, with the exception of sewers. Located near the boundary of Tucson Mountain Park, this site has great natural beauty.

Site Recommendations. In the selection of sites for the Pima County Junior College, all efforts were made to locate available sites which would (1) give the community a junior college in which the citizens of the county could take pride, and (2) offer students a maximum of convenience and a minimum of cost. The intent was also to locate sites that would be most accessible to use by the community in forwarding its economic growth, cultural advancement, and enjoyment.

While it is understood that final selection of site is to be made by the State Board of Directors for Junior Colleges, the committee, nevertheless, wishes to make certain recommendations.

The present population and indicated near-term growth of Pima County will necessitate more than one junior college within the next ten years. In order to best serve this need, the committee recommends the selection and acquisition of a minimum of three and, if possible, four sites. These sites should be selected so as to be able in the future to serve their own areas most efficiently and, at the same time, offer services to the rest of the county as well. The present population distribution and projected direction of growth in the Tucson Urban Area indicate that these sites should be located to the west, to the northwest, and to the southeast. A further consideration in their selection may be the possibility of a special orientation of curriculum toward agriculture, aerospace industries, governmental service, or other specialized areas of instruction.

While selection of a first site is, of course, of paramount importance, the opportunity to acquire, for the near future, additional locations at the minimal costs now required for Federal land should not be too long delayed.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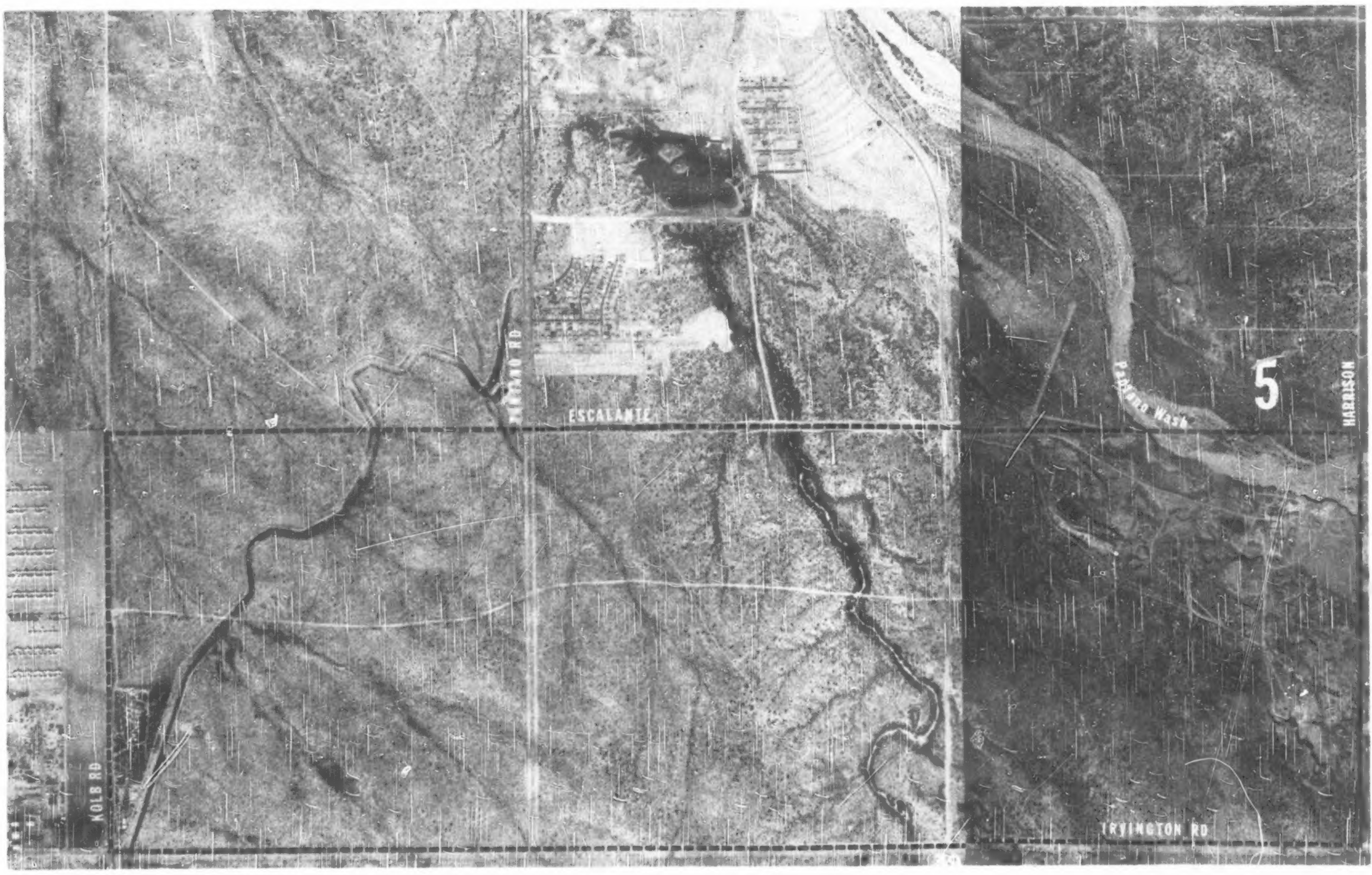
KINNEY RD


PANTANO RD
ESCALANTE
Pantano Wash
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HARRISON
KOLB RD
IRVINGTON RD

PLATE 4

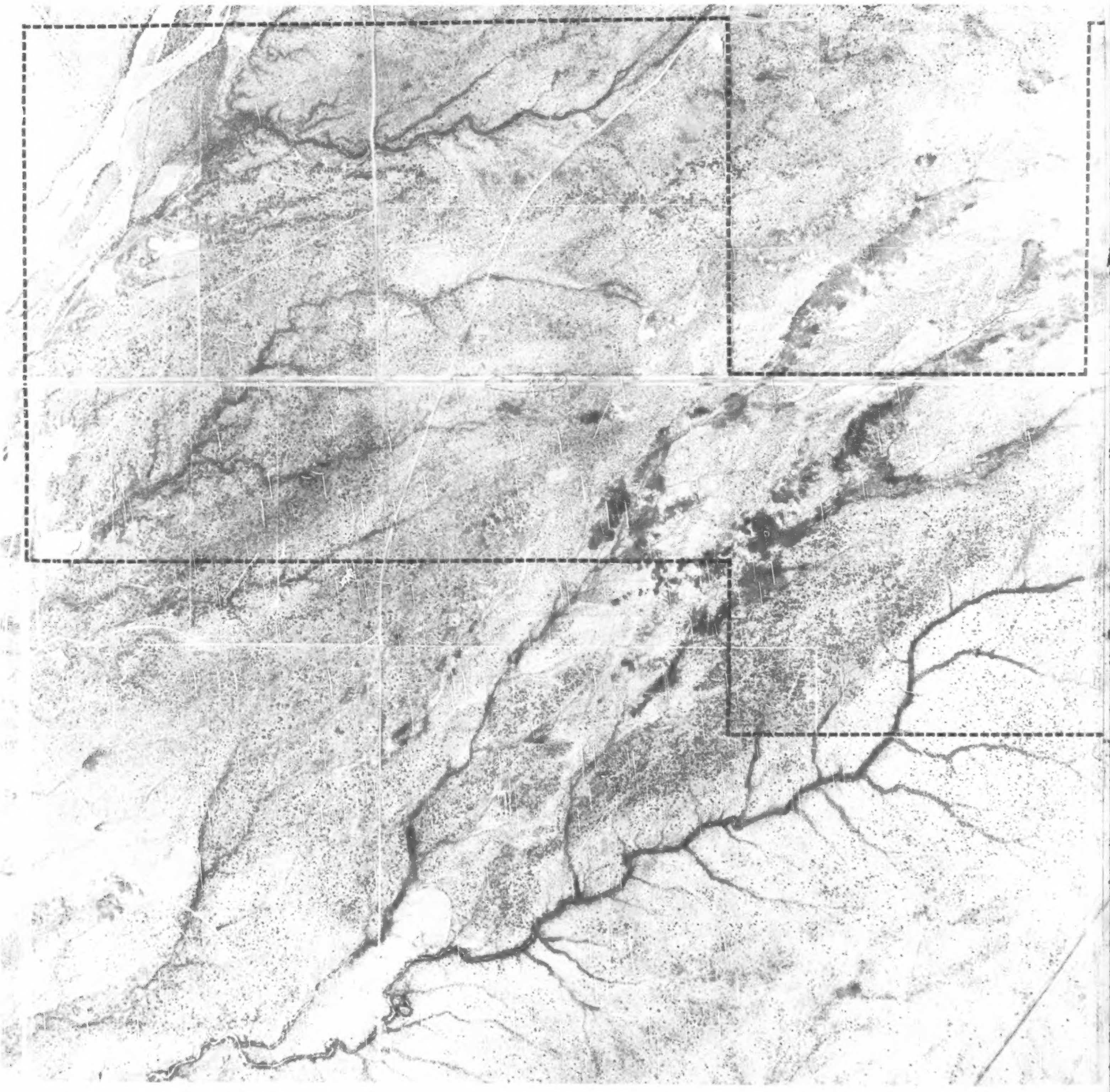

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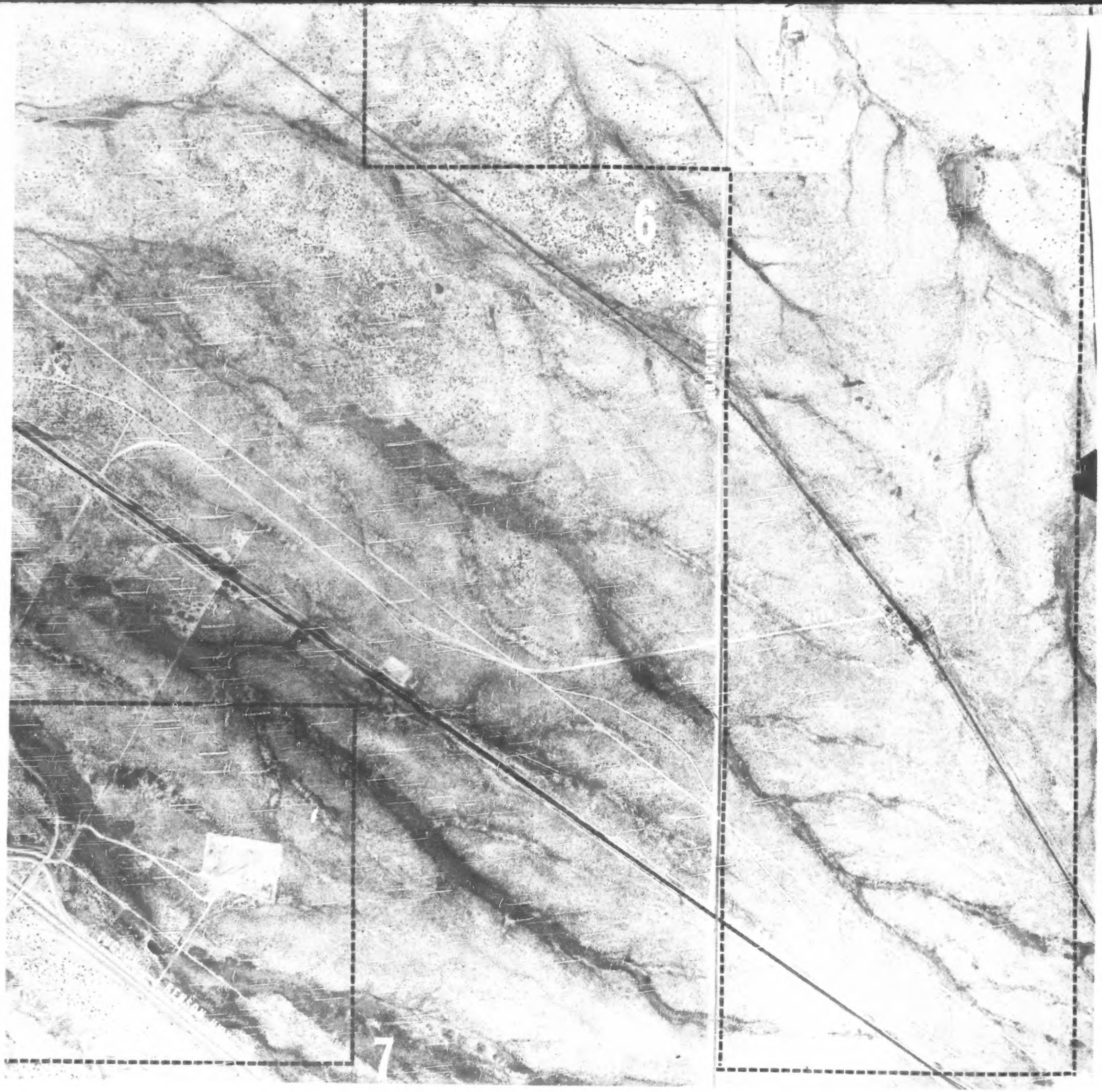
PLATE 5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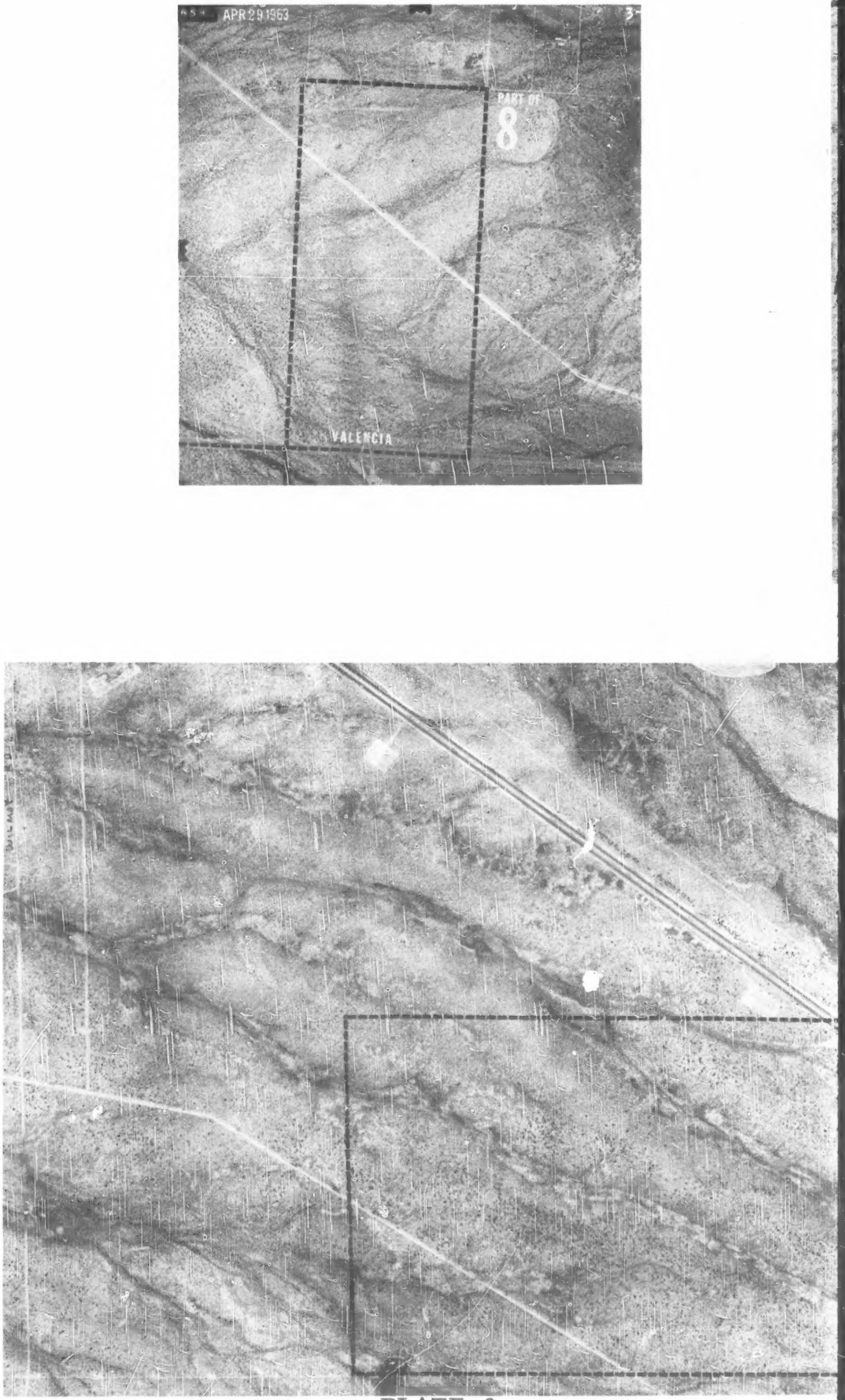
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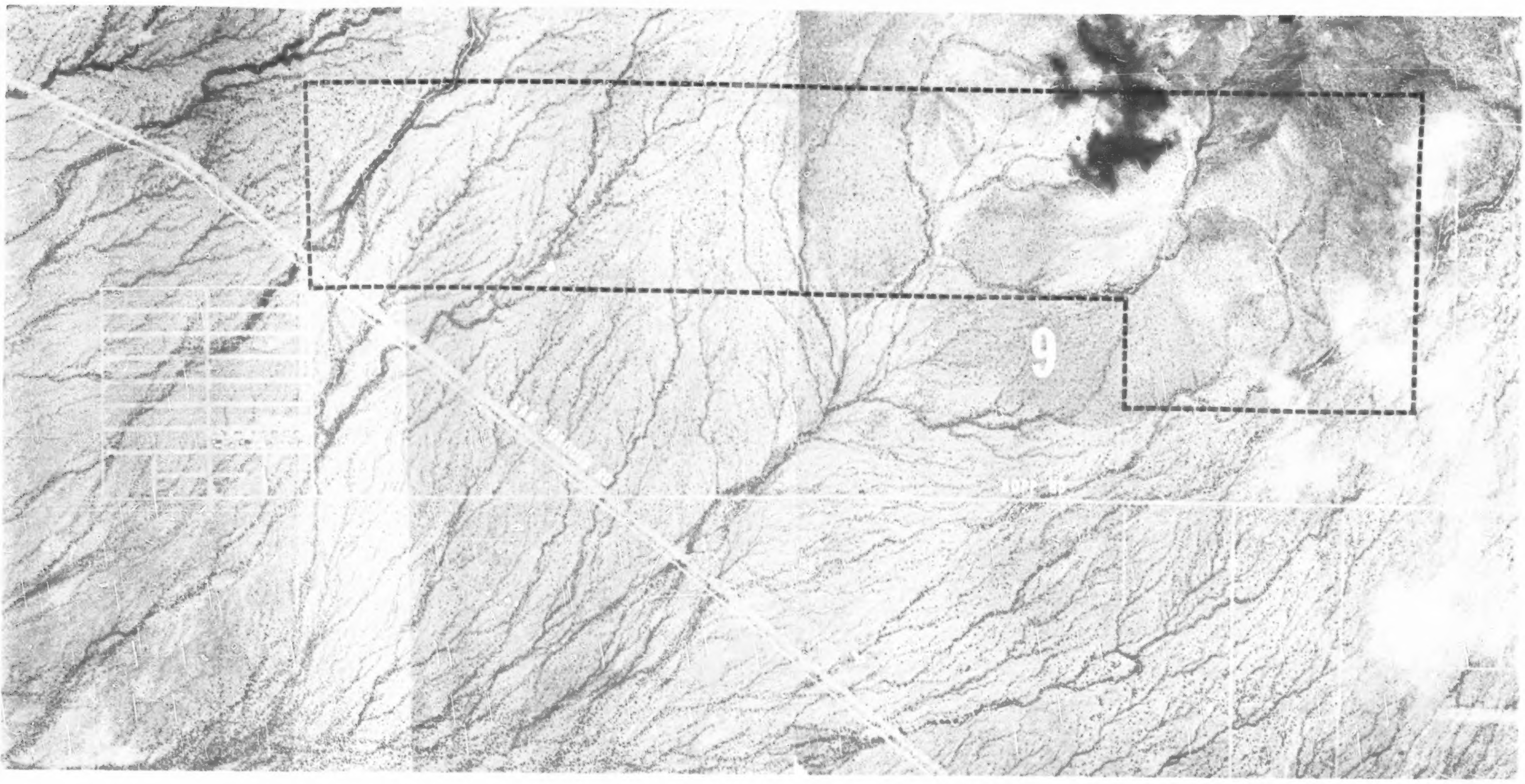
3
PART OF
8
VALENCIA

PLATE 6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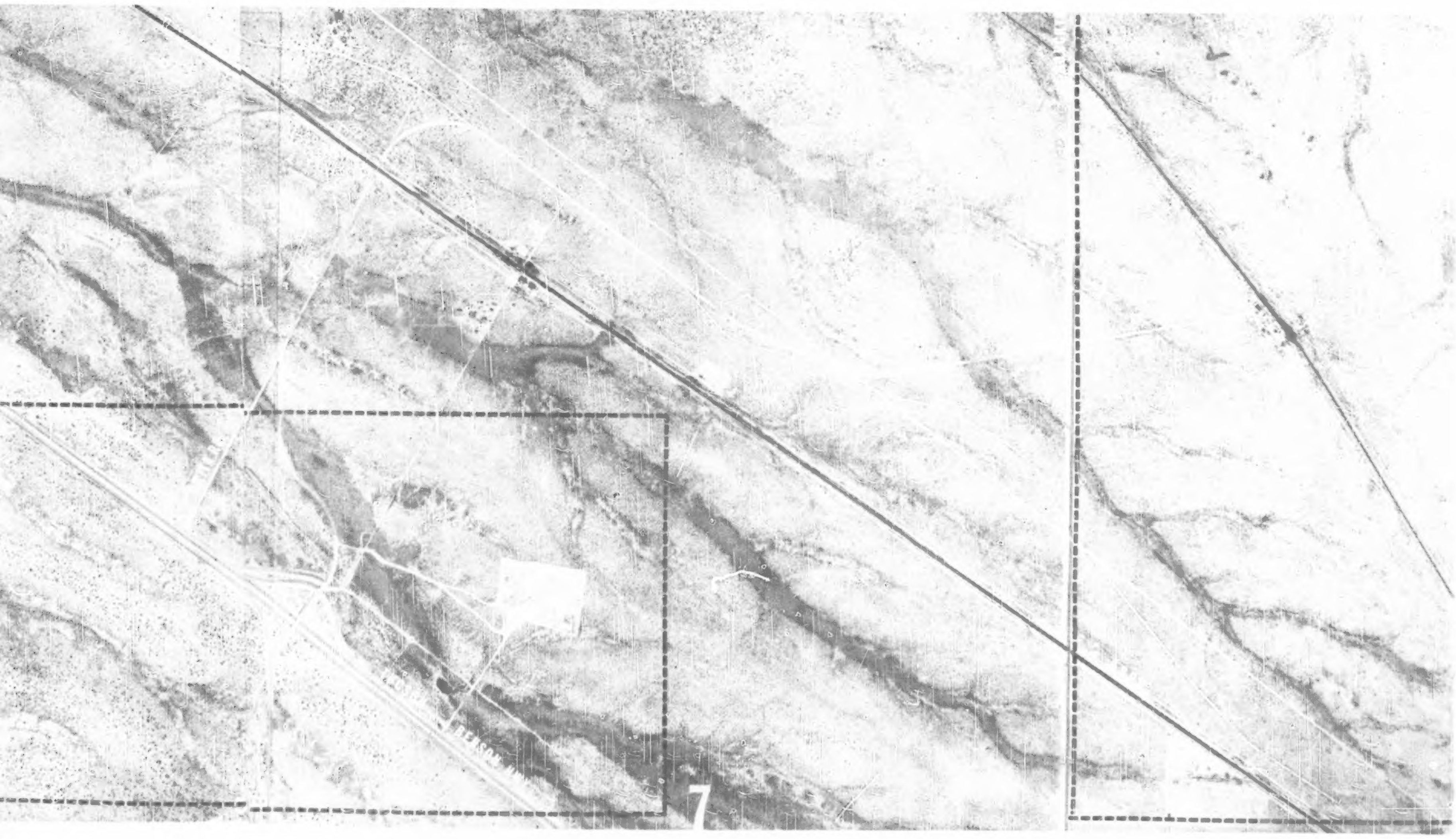
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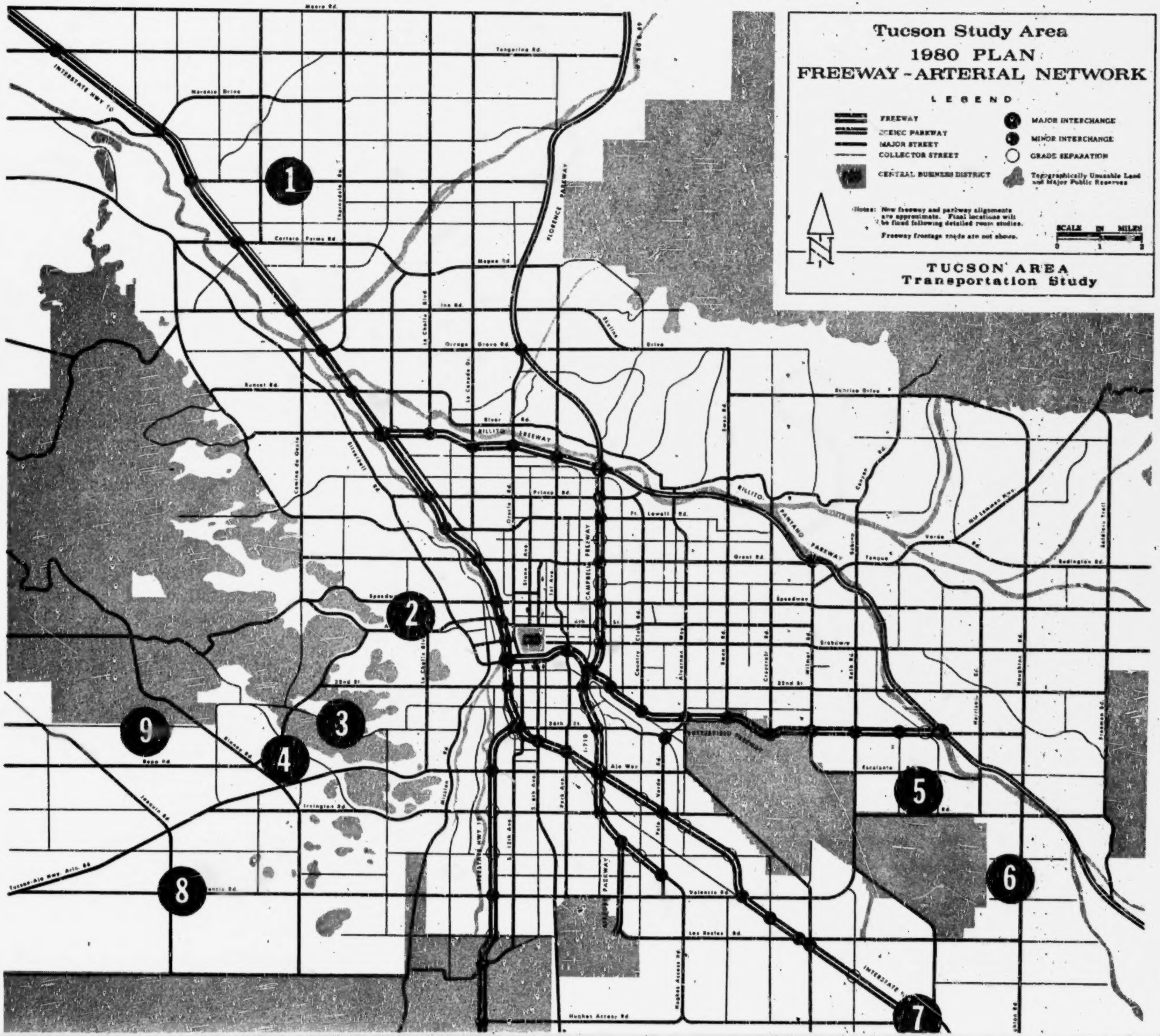
Tucson Study Area
1980 PLAN
FREEWAY - ARTERIAL NETWORK
LEGEND
FREEWAY
SCENIC PARKWAY
MAJOR STREET
COLLECTOR STREET
CENTRAL BUSINESS DISTRICT
MAJOR INTERCHANGE
MINOR INTERCHANGE
GRADE SEPARATION
Topographically Unusable Land and Major Public Reserves
Notes: New freeway and parkway alignments are approximate. Final locations will be fixed following detailed route studies.
Freeway frontage roads are not shown.
SCALE IN MILES
0
1
2
N
TUCSON AREA
Transportation Study
1
2
3
4
5
6
7
8
9
INTERSTATE HWY 10
FLORENCE PARKWAY
RILLITO FREEWAY
RILLITO PANTANO PARKWAY
CAMPBELL FREEWAY
INTERSTATE HWY 19
I-710
Moore Rd.
Tangerine Rd.
Magee Rd.
Ina Rd.
Orange Grove Rd.
Skyline Drive
Sunrise Drive
Sunset Rd.
River Rd.
Prince Rd.
Ft. Lowell Rd.
Grant Rd.
Speedway
Broadway
22nd St.
36th St.
Ajo Way
Irvington Rd.
Valencia Rd.
Los Reales Rd.
Hughes Access Rd.
Bopp Rd.
Ajo Way
Escalante
Tanque Verde
Redington Rd.
Camino de Oeste
Silverbell Rd.
La Cholla Blvd.
La Canada Dr.
Oracle Rd.
Stone Ave.
1st Ave.
Country Club Rd.
Alvernon Way
Swan Rd.
Craycroft Rd.
Wilmot Rd.
Kolb Rd.
Houghton Rd.
Freeman Rd.
Mission Rd.
12th Ave.
6th Ave.
Park Ave.
Palo Verde Rd.
Sabino Canyon Rd.
Mt. Lemmon Hwy
Tucson-Ajo Hwy Arth. Rd.
Joaquin Rd.

PLATE 7

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Experience in locating community junior colleges indicates that in planning facilities to serve a population the size which will exist in Pima County and the Tucson Urban Area in the foreseeable future, it would be superfluous to analyze the presence of educational needs by geographical district or portion of the total area. On this basis no attempt was made to relate presence of need as expressed by youth, parents, or insustry, business, and government in different segments of the county or the Tucson urban area to location of site. The size of the area demographically and geographically renders such a consideration immaterial, in selection of a site location, according to experience elsewhere compared to considering locations which will meet all other criteria established.

Building and Facility Needs

The general building and facility needs for the initial community college program are directly related to the educational requirements of the community and to the projected initial enrollments. Assuming the projected enrollments to follow "Conservative A" estimates (delineated in the following chapter, in the school year 1969-1970, there would be 2,965 F.T.S.E.'s (Full-Time Student Equivalents) in a Pima County community junior college.

In general, and without consideration of the specific types of educational needs implied in the earlier chapters of this survey, an appraisal of the types of facilities that should be included in a comprehensive community college indicates the following:

Administrative
Student Center
Library
Fine Arts
Auditorium
Science
Business Education
General Class Rooms
Technological Shops
Physical Education
Health Facilities

Because it is anticipated that students from areas remote from Tucson such as Ajo will be enrolled, the master plan should include dormitory facilities. However, sufficient supervised housing can be provided in nearby urban areas to eliminate the need for this type of construction in the initial phase. As accurate needs are determined, these facilities can be added in later phases.

For purposes of this study, the basis for determining facilities required and the range of areas required for buildings was the previous experience at Arizona Western College. Relating to this prototype college, an initial conservative estimate of a range from 210,000 square feet to 250,000 square feet for the Pima County Junior College should be considered for the enrollments projected for the initial year.

Costs will vary with the type and use of building. Arizona Western College cost an everage of $15.35 per square foot in 1962. Updating these figures to present day prices, taking into consideration recent cost increases, would set the average cost per square foot at approximately $20.00 in mid-year 1966. A conservative projection for 1968 indicates an approximate average of $22.00 per square foot building cost. From information received from the office of the Executive Director of the Arizona State Board of Directors for Junior Colleges, the building cost (1962), not including dormitories, for Arizona Western College was $1,902,000, with 1,134 F.T.S.E.'s in 1965, its third year of operation. This indicates a $1,680.00 construction cost per F.T.S.E. Cochise County, costing $1,951,900 (1963) with 824 F.T.S.E.'s in 1965, its second year of operation, experienced a $2,370.00 cost per F.T.S.E. (Note that as F.T.S.E. increases, the cost per F.T.S.E. decreases in almost direct relationship.) These figures are included as a comparison to the preliminary estimate developed for the Pima County Community College.

Inasmuch as the selection of the final site has not been made -- and those under consideration vary greatly as to topography, size, and availability of utilities -- it is recommended that a cost be considered for site improvement (consisting of roads to site where necessary, internal streets and paved parking areas, extension of sewer service, water, gas, and electricity to the site and connections to buildings, landscaping and similar expenses) cover a range from $150,000 to $750,000 of additional costs. These figures do not include any estimates for furniture and equipment. A range of 15 per cent to 25 per cent would take care of average quality and normal requirements. Special equipment, closed circuit TV, and custom designed items, will naturally increase this percentage.

A fair appraisal of facility costs in the initial phase indicates a range in total budget for this purpose from $5,800,000 to $7,500,000. Of this amount, $4,600,000 to $5,500,000 would be assigned to building construction costs. The remainder would be assigned for site improvements, and equipment and furnishings as outlined above, plus fees, engineering tests and necessary soil investigations.

It may be feasible to consider providing the necessary building facilities in two or three phases by the technique of erecting initially only those facilities considered of prime importance and by employing multiple use of spaces until the increase in enrollment demands separate facilities.

In the first category, consideration may be afforded to omitting in the initial phase construction of separate facilities for such elements as Physical Education, Business Education (using instead general class rooms), and the auditorium. In the second category it may be possible to combine in one building the administration and Business Education, using the Student Union dining room for auditorium purposes, etc.

A further means of reducing the initial expenditure would be to make application for funding of construction costs of the auditorium, dormitories, and other facilities that qualify, to Housing and Urban Development Authority of the U. S. Government, and for appropriation for costs of construction for sewage treatment facilities and similar health facilities to Health, Education and Welfare, U. S. Government.

Certain special considerations for disabled students should be given to the design of the school. Such design should not necessarily increase costs, but it is essential, particularly for a college in a metropolitan area with its great cross section of students. Some of these recommendations are to provide ramps, doors, and other openings wide enough for wheel chairs, hand rails and guide rails, close and easy access to parking, special entrances and spaces for wheel chairs at sloped floor lecture halls and auditoriums, and the omission of thresholds and steps at classroom entrances. United States Government and many international, governmental, and private agencies have published information covering these factors.

In summary, this survey outlines only generalized needs and costs. The approach used in the study emphasized the use of the greatest economy consistent with planning for a facility that would meet anticipated needs as indicated in the survey results of the overall committee. These needs would be best and most economically met by a construction program allowing for a maximum use of multi-purpose buildings with additions planned for future more specific and specialized uses. Site location as close as possible to community facilities, services, and amenities such as libraries, research centers, museums, places of amusement and recreation, would be particularly important in this approach to staged planning.

Summary and Conclusions

The findings of the Site and Housing Sub-Committee follow:

1. A county-wide community junior college should be located so as to best serve the entire county, and its geographical relationship to the concentration of governmental, industrial, and commercial activities is important.

2. Any economies that will not adversely affect the community college's service to the county should be realized in site acquisition and building programs.

3. The minimum sized site should be 120 acres, and all indications point to the desirability of as large a site as possible.

4. Suitable sites with existing useable structures do not exist.

5. Experience in locating junior colleges indicates that in planning facilities to serve a population the size which will exist in Pima County and the Tucson Urban Area in the foreseeable future, it would be superfluous to analyze the presence of educational needs by geographical district or portion of the total area.

6. Since no private sites met the demands of the basic criteria, and because Federal and State lands of sufficient size are obtainable within reasonable distances of the population center, and because these lands may be acquired at nominal initial costs, nine sites of Federal and State land were finally selected. However, the sub-committee indicates that favorable offerings of private land may still be given consideration.

7. Since final site selection is done by the Arizona State Board for Junior Colleges, the sub-committee makes no recommendaions, but presents descriptions of nine sites for consideration by the Board.

8. Although it is of paramount importance to decide the one site that will best serve the initial years of the junior college, the committee recommends the selection and acquisition of three, and if possible, four sites, to provide for projected growth of the college. Studies of the Tucson Urban Area indicate that these sites should be located to the west, the northwest, and the southeast. The additional locations should be acquired while they are still available from the State and Federal Governments at minimal costs.

9. Based on projected enrollments for the initial years and experience at Arizona Western College, the physical plant should range from 210,000 square feet to 250,000 square feet. At the estimated 1968 cost of $22.00 per square foot, this means $4,600,000 to $5,500,000 for building construction costs. Additional funds for site improvements, equipment, and other necessary costs indicate a range in the total budget of from $5,800,000 to $7,500,000.

10. It may be feasible to consider providing the necessary buildings in two or three phases by initially erecting only facilities of prime importance and by employing multiple use of spaces.

11. A further means of reducing the initial expenditures would be to seek Federal monies for certain health facilities and for construction of an auditorium, and as the need develops in the future, for housing students from the more distant areas of Pima County.

CHAPTER VII

PROSPECTIVE ENROLLMENTS, LEGAL PROVISIONS, AND FINANCIAL ASPECTS

Part I -- Prospective Enrollments

Introduction. Several methods have been used to predict future community college enrollments which might be expected. The method which experience has demonstrated most closely approximates enrollments as they actually develop is based on a ratio of community college enrollments to enrollments in grades 9-12 within secondary schools in the area to be served by the college. Enrollment forecasts for the Pima County high schools were prepared by the Pima County Planning Department which has previously made rather reliable enrollment forecasts of schools within the County.

The survey director examined carefully the methods used by the Planning Department in preparing forecasts for purposes of this study, and he has found them to be the most reliable ones in use by demographers throughout the country. The methods used reflect differences in residential saturation, economic character, and birth rate trends throughout the County. Methods used also assume that the proportion of seriously handicapped children, school dropouts, and death and migration rates, school promotion policies, and birth rates would remain fairly constant. Methods used take into account the combined effect of these several variables. Projections are based on the additional assumption that economic and social conditions will not change radically from what they are presently or have been during the previous decade. Under these assumptions and in accordance with the methods used, enrollment forecasts for both public and non-public grades 9-12 within the County are deemed to be the most reliable prediction possible, and are therefore accepted as a valid basis upon which to do future planning with reference to the need for a public community college.

High School Enrollment Forecasts. Enrollment forecasts for grades 9-12 for each of several years are shown in Table 86. High school enrollments may be expected to increase by about 52 per cent between 1966-67 and 1979-80. The number of high school seniors is expected to increase by slightly more than 53 per cent during those years.

TABLE 86

HIGH SCHOOL ENROLLMENT FORECASTS

Year	Grades 9 - 12	Number of Seniors
1966-67	22,837	4,840
1969-70	25,562	5,505
1975-76	30,354	6,332
1979-80	34,644	7,423

Enrollment Data Having Implications for a Pima County Community College. One of the difficult tasks confronting the forecaster of community college enrollments is to assess the influence of existing institutions. Data were obtained from the University of Arizona on the number of first-time enrollments of persons residing in Pima County beginning with the year 1961 through 1965, inclusive. Enrollment data indicate that during this period there were 7,365 Pima County residents enrolling as first-time students. This constitutes approximately 46.5 per cent of the graduating seniors from the secondary schools in the area. Annual school reports indicate that during a similar period 59.8 per cent of all public and private school graduates were reported continuing their education somewhere in an educational institution. Over 13 per cent must have gone somewhere other than the University of Arizona.

Experience has demonstrated that when public community college programs are developed to meet a diversity of terminal, technical and occupational needs in addition to appropriate programs of pre-professional and university parallel general education offerings, it is reasonable to expect the full-time equated size of the freshman and sophomore year enrollment to approximate a fourth to a third of the enrollments in grades 9-12 of the high schools. One would not expect this proportion to obtain during the initial years of community college establishment and development; however, enrollments approximating this magnitude may be expected after the program is in operation.

Various factors influence this ratio, such as length of time the institution has been in existence, the number of part-time students attracted, the amount of tuition charged, the accessibility of other educational opportunities, density of population, philosophy of educational service held by the staff and the administration, scope of program and services, and previous post-high school attendance patterns of graduates. Estimates should consider experience of other nearby community colleges in the area on the assumption that a similar type of institution will attract about the same proportion of students. However, it might be expected that if full enrollment possibilities were realized through a program adapted to serve the diversity of educational needs of youth and adults and if a continuous effective guidance effort was extant for grades 9-12 and the freshman and sophomore years, enrollments would more nearly approximate potential possibilities than typical experiences of community colleges in some other regions. One helpful approach to forecasting community college enrollment possibilities is to examine experience elsewhere where a community college has been developed in the shadow of major four-year institutions. Some of the assumptions underlying forecasts are based upon data from other similar types of situations.

It was thought desirable to determine the experience of other Arizona junior colleges. For the years 1963-64 and 1964-65 the local (resident) full time student enrollments in Graham and Yuma Counties was 18.8 per cent of enrollments in grades 9-12 in those counties. Beyond serving resident students from the district, service to foreign students and non-residents depends upon board policy and availability of space. In Graham County, foreign students constituted about 68 per cent of the total community college full time student enrollments in those years. In contrast, foreign student enrollments in Yuma County were 20.3 per cent of the total full time student enrollments reported to the Arizona State Board of Junior Colleges. A Pima County community junior college would have primary responsibility to Pima County residents; therefore, enrollment estimates should here be concerned with this possibility. In 1964-65, the total community college enrollment in Cochise and Maricopa County junior colleges were respectively 15 and 14.4 per cent of enrollments in grades 9-12. Since Cochise College is newly organized and Maricopa County Junior College has only recently begun to expand physical facilities to accomodate students who wish to be served, it is expected that the ratios will increase and level off between 20-25 per cent of grades 9-12 for per cent of residents attracted.

Data from the survey itself may be useful in prognosticating enrollments. Graduates contacted were asked which of several types of schools they would have attended if they had been available at the time of graduation. Twelve per cent indicated they would have attended a community junior college and 9 per cent indicated a trade or vocational school. Combined, this 21 per cent might have been interested in programs of a type which community colleges offer. Of seniors in Pima County schools in 1966, 60 per cent said plans definitely included college attendance. This is the same per cent of all seniors over the last five years reported to have continued their education. Seventeen per cent more indicated future plans would "probably" include college. The per cent of seniors aspiring to continue their schooling after high school graduation was about 18 per cent more than the per cent which were actually reported continuing over the last five years. Of all seniors with no plans for college about 13 per cent, or 8 per cent of all seniors, indicated interest in advanced technical, business or trade training. More than this, it was found that about 35 per cent of parents of fifth grade children expected their child to complete two years of college and 9 per cent expected their child to complete a trade or vocational school. During the past 5 years 6.3 per cent of all graduates were reported attending a trade, technical or vocational school after graduation.

The expressed interest of seniors, expectations of parents of young children, and interests which graduates indicate they would have had in programs which a junior college would offer give reason to believe that 20 per cent of enrollments grades 9-12 would be a reasonable assumption of enrollment in a Pima County Community Junior College. These data considered above with experience in other existing Arizona two year colleges gives support to the assumptions used in computing liberal (b) and conservative (a) projections shown in Table 87.

Community Junior College Enrollment Prospects. Full-time equated enrollment prospects are shown in Table 87 as they have been computed based upon several different assumptions. Under the liberal estimates the assumption is that the full-time equated enrollment in a community college would begin with a number approximating 15 per cent or 10 per cent of the high school enrollments grades 9-12, with an annual increment over a five-year period to 25 per cent in the first instance and to 20 per cent in the second instance. These assumptions are not intended to mean that 10 and 15 per cents respectively of the individuals in grades 9-12 would enroll in the community college but rather that the total enrollment of the community college including adults of all ages as well as young persons would approximate those percentages on a ratio basis to the enrollments in the high school.

TABLE 87

COMMUNITY COLLEGE ENROLLMENT PROSPECTS
(FULL-TIME EQUATED)

	Liberal		Conservative	
Year	(a) 15% Grades 9-12 2% Annual Increase to 25%	(b) 10% Grades 9-12 2% Annual Increase to 20%	(a) 10% Grades 9-12 1.6% Annual Increase to 18%	(b) 5% Grades 9-12 2% Annual Increase to 15%
1968-69	3,698	2,465	2,465	1,232
1969-70	4,346	3,067	2,965	1,789
1970-71	5,009	3,690	3,480	2,372
1971-72	5,704	4,346	4,020	2,988
1972-73	6,431	5,033	4,585	3,635
1973-74	7,189	5,752	5,176	4,314
1974-75	7,389	5,911	5,320	4,434
1975-76	7,588	6,071	5,464	4,553
1976-77	7,856	6,285	5,657	4,714
1977-78	8,124	6,500	5,850	4,875
1978-79	8,395	6,716	6,044	5,037
1979-80	8,661	6,929	6,236	5,197
	*(12,372)	*(9,898)	*(8,908)	*(7,424)

*Estimated head count on the assumption full-time enrollments would equate out at approximately 70 per cent.

Both of the conservative forecasts are based upon the assumptions that smaller per cents of enrollments grades 9-12 would be reflected in community college enrollments. If the full-time equated enrollments equated out at about 70 per cent of head count, then as shown in the parentheses, the numbers of different individuals that might reasonably be expected to enroll in a public community college might run as high as 12,372. In terms of previous experience, and in the judgment of the survey director, the actual enrollment which might be expected to develop is most likely to fall between the conservative "a" forecast and the liberal "b" prediction. Full-time equated enrollments might reasonably be expected to fall between 6,200 and 6,900 by the year 1979-80 with a corresponding head count of between 8,900 and 9,900 individuals. Projected enrollments of this magnitude would seem to make consideration of a second campus within the next ten to fifteen years necessary as part of the long-range planning program.

Part II -- Legal Provisions

Because the Junior College Study Committee recommends the establishment of a county-wide junior college district, only the provisions of law applicable to that type of district are given herein.

Qualifications of Proposed District. To qualify as a county-wide junior college district, the county must have a total assessed valuation of at least 60 million dollars and a potential enrollment of 320 full-time equivalent students, as determined by the State Board of Directors for Junior Colleges. This requirement is deemed to have been met if 40 per cent of the high school graduates of the proposed district for the two school years preceding the year the junior college district is organized equals or exceeds 320 full-time equivalent students.

Procedure to Form District. Ten per cent of the qualified electors of the proposed district must petition the County Superintendent of Schools for the establishment of the district. The petition is required to set forth the name and boundaries of the proposed district.

The County Superintendent verifies the signatures and then submits the petitions to the State Board of Directors for Junior Colleges, which surveys the proposed district to determine whether it meets the qualifications as to assessed valuation and potential enrollment. Upon approval of the petition by the State Board, it is returned to the County School Superintendent, who notifies the Board of Supervisors of the approval by the State Board.

The Board of Supervisors is then required to submit the question of the establishment of a junior college district to election. The election is either a special election or the next general election. Qualified electors of the county are eligible to vote. If the vote is favorable, the district is deemed to have been formed.

No later than the January 15th following such election, the State Board must submit a plan to the legislature for the formation and establishment of a junior college district.

Administration of the District. The district is administered by an elected Junior College District Governing Board of five members. The State Board establishes five precincts within the district, and the initial board is appointed by the County School Superintendent, to serve until the first election.

Elections are held and conducted at the time and in the manner school trustees are elected. Elections for school trustees are held on the first Tuesday of October of each year. At the first election, a board member is elected from each precinct. The candidate receiving the most votes is elected to a five year term, the next highest to a four year term, the next highest to a three year term, the next to the lowest a two year term, and the lowest to a one year term. The next election is in the precinct in which the term of the member is expiring. The order of elections is thus established and thereafter followed. Vacancies are filled by the County School Superintendent for the unexpired term.

The Junior College District Governing Board has the following powers and duties:

1. To maintain the junior college for a period not less than eight months a year but longer if funds are available.
2. To enforce the courses of study and the use of textbooks prescribed and adopted by the State Board.
3. To visit the junior college and examine its management, condition and needs.
4. To exclude books, publications, etc. of a sectarian, partisan, or denominational character.
5. To appoint a president or presidents, vice presidents, deans, professors, instructors, and such other officers and employees it deems necessary.
6. To fix salaries of officers and employees.
7. To remove officers and employees.
8. To award degrees, certificates, and diplomas.
9. To administer trusts declared or created for the district and receive gifts and bequests and hold in trust, or otherwise, property within the district, and dispose of property with the consent of the State Board.

Finances: Capital Outlay. The State, by legislative appropriation, provides 50 per cent of the total cost for the initial capital outlay, provided, however, that such contribution cannot exceed one-half million dollars. In addition, the State, by appropriation, contributes for capital outlay $115.00 per year for each full-time equivalent student.

The district, with the consent of the State Board, may conduct elections for bond issues to raise funds for capital outlay; purchase of land; purchase, erection, remodeling or completion of building; and purchase of equipment and facilities.

Finances: Operating Costs. No later than July 10th of each year, the district must prepare a budget for the current fiscal year. The budget is submitted to the State Board with a copy to the District Board. The budget must set forth the per capita expenditure per full-time equivalent student, which shall be the total operating expenses. The number of full-time equivalent students is computed by dividing the total college credit units by 15 per semester and is based on regular day enrollment.

The State annually provides operating funds according to the following schedule:

1. $525.00 per capita per annum for the first 1,000 full-time equivalent students.
2. $350.00 per capita per annum for all full-time equivalent students over the first 1,000.

The balance of the budget is provided by the County.

The County Board of Supervisors may supply funds from other designated sources, or may annually levy a special Junior College tax on property. The rate of tax must be sufficient to provide the proposed amount of the budget less the amount appropriated by the legislature. The taxes are paid into the Junior College fund of the county.

To be eligible for the aforesaid state aid, the district must be equipped with buildings, equipment and campus approved by the State Board, have at least 320 full-time equivalent students, and have complied with all State Board requirements as to budgets and curriculum.

For the first two years of operation, state aid for full-time equivalent students is based on an estimated annual budget. Thereafter, "full-time equivalent students" means the sum of the full-time equivalent students for the previous school year plus the increased full-time equivalent students of such year over the full-time equivalent students of the year prior to the previous school year. If there is a drop in the full-time equivalent students from the year prior to the previous year, the full-time equivalent student figure for the previous year is used.

Tuition. A district may admit a student from any part of the state which is not a part of an established junior college district on the same conditions as a resident. The county where the student resides pays the Junior College District an amount equal to the operational expenses per capita per annum minus the average state aid per capita per annum. The "average state aid per capita per annum" is determined by dividing the total amount of state aid by the total number of full-time equivalent students.

The County School Superintendent of the county of the student's residence certifies to the Board of Supervisors of such county the fact of such residence. The Board of Supervisors then draws a warrant on the county treasurer in favor of the Junior College District. The tuition may be taken by the Supervisors from unencumbered funds or the Supervisors may levy a "Junior College Tuition" tax.

PART III -- Financial Aspects

Introduction. Two types of expenditures are required of a community college. First, there must be funds to operate the institution, (e.g. instructional salaries, maintenance, administrative costs, etc.). Secondly, there must be financial resources to pay for capital outlay needs such as acquisition of site and its development, building, and equipment.

Sources of Operating Funds. Funds used to operate community colleges in different states may be derived from several sources, namely, student tuition and fees, local property taxes, state aid, and in some cases federal aid. Continuing and increasing attention is being given in the federal government regarding federal aid to community colleges for both capital outlay and for operating funds for certain types of technical programs. Arizona law permits community colleges to charge tuition and fees for certain non-resident students, provides for grants of monies from the state for capital outlay and for operational expenses, and makes it possible to accept from the federal government certain types of technical programs. Experience of large comprehensive Michigan community colleges is that this amount approximates about 8 per cent of the per capita operating expenditure per year. In addition, a local tax levy will be necessary to help defray operational expenditures.

Estimating Operating Costs. Among the several methods that can be used in estimating operating costs, the method most commonly used is per capita cost. This is computed by dividing the total amount of money spent for the operation of a college for one school year by the total number of students enrolled on an equated full-time basis.

Depending on the scope of curriculum and location, the average annual per capita operation expenditure varies; the average annual per capita expense for the three longest established junior college systems in Arizona for the school years 1963-1964 and 1964-1965 was $837.62. There has been a steady annual rise of about 3 per cent in operating costs, and projected future costs have been made with this in mind. An estimate of total costs, exclusive of capital outlay expenditures, can be made by multiplying the amount of gross per capita operating cost by the projected number of students expected to be in attendance.

Legal authorization exists in Arizona for taxes to be levied for the operation of a community college district, and for the purpose of this study computations were made to determine the amounts of local tax levy which would be necessary taking into consideration funds which might be available from other sources. Shown in Table 88 are the expected per student costs for the years 1968-1980, taking into account rising operating costs.

No allowance has been made for tuition income from nonresident, out-of-county, or out-of-state students as it was thought this will be negligible in relation to totals. Considerable federal aid is expected to be made available; however, because of lack of definite information and to avoid understating the needs, the amount available from these sources has not been considered in this study. However, as previously stated, certain community colleges in Michigan have found this to approximate 8 per cent of the per capita operating expenditures per year. Amount of state monies is based on current statutory law. The difference between estimated operating expenses and state sources of revenue was assumed to be that amount which would be derived from local tax revenues. Any increase in monies available from other sources would alter proportionately the amount to be derived from local sources. It is the Finance Sub-Committee's opinion that estimated local levy requirements as computed and shown in Table 88 are maximal. Any increases in available other funds as well as any additional amounts of state derived funds, will reduce these anticipated local levy estimates.

TABLE 88

ASSUMED SCHEDULE OF OPERATING COSTS AND EXPECTED DISTRIBUTION

Year	Projected Enrollment[1]	Est. Per Capita Cost[2]	Estimated Operating Expense	Operating Funds from State[3]	Balance To Be Paid by Pima County	Local Levy[4]
1968-69	1,356	$ 888.62	$1,204,968.72	$ 649,600.00	$ 555,368.72	.0836
1969-70	2,817	915.27	2,578,315.59	1,160,950.00	1,417,365.59	.3478
1970-71	3,480	942.72	3,280,665.60	1,393,000.00	1,887,665.60	.3828
1971-72	4,020	971.00	3,903,420.00	1,582,000.00	2,321,420.00	.4570
1972-73	4,585	1,000.13	4,585,596.05	1,779,750.00	2,805,846.05	.5364
1973-74	5,176	1,030.13	5,331,952.88	1,986,600.00	3,345,352.88	.6214
1974-75	5,320	1,061.03	5,644,679.60	2,037,000.00	3,607,679.60	.6500
1975-76	5,464	1,092.86	5,971,387.04	2,087,400.00	3,883,987.04	.6795
1976-77	5,657	1,125.34	6,366,048.38	2,154,950.00	4,211,098.38	.7152
1977-78	5,850	1,159.10	6,780,735.00	2,222,500.00	4,558,235.00	.7516
1978-79	6,044	1,193.87	7,432,185.92	2,290,400.00	5,141,785.92	.8232
1979-80	6,236	1,229.68	7,668,284.48	2,357,600.00	5,310,684.48	.8254

[1] The first two years have been adjusted for a first year's program that would serve principally a freshman class.

[2] Based on the 1963-64 and 1964-65 average per capita cost from Eastern Arizona, Arizona Western, and Maricopa County Junior Colleges, with an assumed annual increase of 3 per cent over the base year, 1966-67.

[3] The State pays $525 per student for the first 1,000 full-time equivalent students and $350 per student for all full-time equivalent students in excess of the first 1,000 full-time equivalent students.

[4] Expressed in cents per $100.00 of assessed valuation, and based on an assumed 3 per cent increase in assessed valuation per year.

Building and Site Costs. Capital outlay expenditures necessary include those for acquiring land, improving it, constructing buildings, and equipping the structures. Expenditures necessary for building, site, and equipment purposes depend upon numberous variables such as the size and location of site, etc. In planning new facilities, two types of major expenditures are required. One is for acquisition of land, and the other for building construction and equipment.

The effect of Arizona's legislation governing junior colleges is that in addition to the substantial funds the state grants for operating costs, the capital costs for site improvement, construction, and equipment can be entirely paid from state funds. To illustrate: At the outset, the

State would give this new junior college as much as $500,000.00 for capital expenditures. In addition to this amount, a further provision of the law enables the State to give to each junior college $115.00 per annum for each full-time equivalent student. This latter provision means that when full-time equated enrollments reach 4,350, the State would give more than $500,000.00 each year towards capital expenditures.

The projected enrollments in Table 89 assume the opening of a Pima County Junior College in the fall of 1968, and they follow the "Conservative A" predictions that have been used throughout the study in estimating costs. Here it can be seen that the State's initial grant of $500,000.00 for capital expenditures would be increased in the first year (1968-1969) by $115,940.00: to wit, $115.00 times the projected 1,356 full-time equated students. In subsequent years, this capital outlay from the State increases as the projected enrollment grows. Cumulating these amounts, it can be seen that in the fifth year of operation (1972-1973) the State will have contributed $2,361,620.00 for capital expenditures, and $5,520,325.00 by the tenth year (1977-78). By extension of the table, there would be expectations in excess of $9,000,000.00 by the fifteenth year and $12,000,000.00 by the twentieth year even if enrollments grow no larger than those projected for the twelth year (1979-1980).

Thus it can be seen that the effect of the law is for the State to remove the burden of junior college capital expenditures from the county, for these capital outlay funds from the State can be applied to general debt service, and thus be used to reduce all of the principal and interest of bonded indebtedness for capital expenditures.

For the early years of the junior college, the projected capital costs are from $5,800,000.00 to $7,500,000.00, although these may initially be reduced by staged planning and by certain Federal grants. Nevertheless, the principal and interest for bonds of these amounts could be paid with State funds in fifteen years or less. Indeed, from these conservative enrollment projections, an initial bond issue of $10,000,000.00 would be amortized entirely out of state funds in twenty years. The availability of State funds in these amounts needs be considered in that it seems reasonable to predict an enrollment of 5,000 students in 1975, and in excess of 6,000 students by 1980.

Whatever size bond issue is finally decided upon, the committee recommends that bonds be of no longer duration than twenty years. Typically, junior college bonds in

TABLE 89

AVAILABILITY OF CAPITAL FUNDS FROM STATE SOURCES

Year	Projected Enrollment	Projected Annual Capital Outlay from State[1]	Cumulative Annual Capital Outlay from State
1968-69		$500,000.00	
	1,356[2]	155,940.00	$ 655,940.00
1969-70	2,817	323,955.00	979,895.00
1970-71	3,480	400,200.00	1,380,095.00
1971-72	4,020	462,300.00	1,842,395.00
1972-73	4,585	527,275.00	2,369,670.00
1973-74	5,176	595,240.00	2,964,910.00
1974-75	5,320	611,800.00	3,576,710.00
1975-76	5,464	628,360.00	4,205,070.00
1976-77	5,657	650,555.00	4,855,625.00
1977-78	5,850	672,750.00	5,528,375.00
1978-79	6,044	695,060.00	6,223,435.00
1979-80	6,236	717,140.00	6,940,575.00

[1] Initial outlay of $500,000.00 plus $115.00 per full-time equivalent student per annum.

[2] Enrollments for the first two years have been adjusted on the expectation that the first year's program would serve principally a freshman class.

Arizona run for this term, with only interest due during the first two years. This is done because money for capital expenditures will not be available from the state until the college's second fiscal year, and the interest payments for the first year must be met from a local levy.

Part IV -- Summary and Conclusions

The findings of the Legal and Finance Sub-Committee are summarized as follows:

1. Legal provisions exist for the establishment of a community junior college in Pima County with the district boundaries coterminous with those of the county.
2. Primary sources of revenue for operation are presently grants of money from the State of Arizona and local tax levies.
3. It seems reasonable to expect more than 3,000 students in a Pima County Junior College by 1970, and in excess of 5,000 students by 1975.

4. Capital outlay, based on annual equal amortization of principal and interest over twenty years may reasonably be expected to be paid entirely from annual grants of money from the State of Arizona in accordance with present statutes.

5. Based on assumptions of increased annual per capita costs of operation, estimated grants from the State for operating funds and legal authorization to levy local taxes for operation, the local levy requirements might be expected to range from .0836 per $100.00 assessed valuation in 1969 to .8254 per $100.00 assessed valuation in 1980 if enrollments develop in accordance with expectations.

CHAPTER VIII

SUMMARY, CONCLUSIONS, AND RECOMMENDATIONS

This chapter contains a summary of the major findings and conclusions which emanate from them. Since findings are summarized in detail at the end of each preceding chapter, they will not be repeated here in that form. An attempt has been made to summarize the major findings of the survey.

General Characteristics and Background of Pima County.

1. Pima County grew in population at a steady rate from 1870 (5,716) to 1940 (72,838), with mining as the most important industry, although towards the close of this period, agriculture and the tourist trade were gaining strength.

2. From 1940 to 1960 the growth of the county was greatly accelerated, and between 1950 and 1960, the county's principal city, Tucson, led the nation with a 368 per cent increase in population, growing from the 261st largest city in the nation in 1950 to 54th by 1964. In 1965, the county had a population of 340,000 and 324,000 of these were in the Tucson Urban Area.

3. In-migration, which has in recent years exceeded out-migration by two to one is responsible for much of this growth, the average annual migration into the county of 1,413 persons in the 1930-1940 decade rose to 8,049 persons in 1950-1960.

4. Length of time which both high school seniors and parents of fifth grade children had lived in Pima County indicated a relatively high degree of population stability for persons who currently are living in Pima County.

5. There is resemblance between the age and sex distribution of Pima County labor force and that of the nation, but their industrial composition differs. Pima County has a larger per cent in service industries and a much smaller per cent in manufacturing. Government, mining, tourism, manufacturing, and agriculture are the basic industries, but since 1962 both manufacturing and tourism have declined in importance.

6. Government, the leading industry in the county, receives part of its prominence in that almost 9 per cent of metropolitan Tucson consists of the families of the military personnel and civilian employees of Davis Monthan Air Force Base.

7. Education contributes greatly to the size of government. The number of students in the county's public schools had increased from 13,850 in 1940 to 72,437 in the past ten years. Although there have been some reversals (notably in Tucson School District #1 in 1964), the overall record is good, several districts having never been turned down in their requests, and one district (Amphitheater) authorized to bond far in excess of current need and bonding capacity.

8. The rapidly growing University of Arizona, located in Tucson, is important to the county in many ways. In 1964-1965 it received more than $9 million in support of its research activities, and in its twelve colleges which enrolled 21,103 in 1964-1965, it employed a faculty of 2,115.

9. Seventeen private vocational-technical schools in Pima County enrolled approximately 1,100 students in January, 1966. Occupational training is also available in high schools, apprenticeship programs, and the American Institute of Banking program.

10. Parochial schools number eighteen elementary and three high schools. There are a number of private schools and specialized training institutions.

11. Tucson's geographical location makes it a potential distribution center for Mexican trade. A more important asset, however, is its climate. Climate is responsible for the growing tourist trade, and both the Goals for the Community Study and the Committee for Economic Development stress the importance of climate in the potential expansion of the health and medical industry.

12. Mineral wealth is the region's other great asset, and mineral industries are planning expansion in research as well as in mining operations. If mining continues as its present rate of increase, the value of the ore mined in 1980 will be nearly five times that of 1963. Currently, within a radius of 125 miles from Tucson is mined more than half the copper in the United States, and it has been recommended that a copper fabricating industry could be developed in Pima County.

13. Despite the handicap of present transportation technology, there is yet potential in Tucson for the development of entirely new industries manufacturing high-value, light-weight commodities. It is likely that these products could be the outgrowth of expanding research activities in optics, electronics, astrophysics, and health and medicine.

14. Over two-thirds of the respondents from industry, business, and government indicated a definite or probable interest in participating further in discussions or studies to help educators develop post-high school educational programs of two years or less in duration which the typical four year institution does not offer.

15. Nearly 9 of every 10 parents felt that everyone with ability to profit from college, regardless of financial means, should go to college. Only 6 per cent believed only those with superior academic ability or those with ability who can financially afford it should go to college.

16. Ninety-two per cent of all seniors and 78 per cent of graduates indicated their parents either insisted they go to college or wanted them to if they wanted to go.

17. Out of a total of 665 questionnaires distributed to business, industry, and government agencies in Pima County, 236 or 35 per cent were returned. This return shows an above average interest in the development of training programs. The results were higher than this for those employing over one hundred people, which reveals that they are well aware of the necessity of an organized post-high school educational program.

18. Attitudes toward post-high school education, who should have it, and its significance among residents in Pima County are unusually good. An unusually high level of parental aspiration was reported as perceived by seniors and graduates. Attitudes expressed by parents and interest of business, industrial, and governmental officials as well as public support in general throughout Pima County as evinced by passage of financial requests at the polls support this conclusion.

Characteristics of Seniors, Graduates, and Parents.

19. Seven per cent of the graduates responding had received no type of education after graduation, 29 per cent had received on-the-job training, 66 per cent had attended a college or university, and 11 per cent had attended a business or vocational school.

20. About a fifth of parents were non-high school graduates, and 37 per cent of the fathers and 29 per cent of the mothers reported having some college or being a college graduate.

21. An unusually high per cent of seniors were found to be from broken homes.

22. Over two-thirds of the boys and 43 per of the girls were found to work part time while attending high school. Higher per cents of working youth had plans for attending college than those who were not working.

23. Of graduates who were not currently attending school, 86 per cent of the men and 55 per cent of the women were employed full time. Among those who were presently part-time students, 92 per cent of the men and 62 per cent of the women were employed part time. Among full time students, 8 per cent of the men were employed full time, while 43 and 42 per cents of men and women respectively were in part-time jobs.

24. At the time of the study, 49 per cent of the men and 29 per cent of the women were attending school full time, while 54 and 34 per cents respectively of men and women who still lived in Pima County were attending school full time. Thirty-four per cent of all graduates were attending the University of Arizona, 6 per cent were in other Arizona universities and junior colleges, and 6 per cent were attending schools in other states.

25. Fields of interest for further study expressed by seniors coincided rather closely with expressed long range occupational aspirations.

26. Seniors appeared to be enrolled in high school curriculums compatible with future educational aspirations, with most of those planning on college being in a college preparatory curriculum and most of those not planning on attending college being in another type. Only about 15 per cent of youth with definitely no plans for attending college were in a college preparatory curriculum; of all seniors in the college preparatory curriculum, about 8 per cent did not plan to attend college.

27. An analysis of class rank and plans for college revealed that most youth in the top third had plans which would include college. It also revealed that possibly a higher per cent of the middle and lower thirds expect to attend college than is realistic.

28. A relatively high proportion of graduates who later attended a college or university had completed a high school curriculum designed for that purpose.

29. Seniors' plans for the year after graduation seemed to coincide rather well with expressed educational plans. In general, girls whose plans do not include college expect to work and get married, and boys plan to work or enter military service. Few youth with definite plans for college expect to delay entrance.

30. About 56 per cent of all seniors completing high school college preparatory curriculums planned to enroll at the University of Arizona. The largest per cents of seniors by curriculum expecting to attend a junior college were completing a business or vocational or industrial arts curriculum.

31. Of seniors with plans for college, 61 per cent indicated they expected to attend the University of Arizona, 13 per cent planned to enroll in a junior college in Arizona, 14 per cent expected to enroll in another state institution, and 12 per cent expected to go outside the state. Of all seniors, 42 per cent expected to attend the University of Arizona, 9 per cent expected to enroll in a junior college, 9 per cent expected to enroll in another state institution, and the rest expected to go outside the state.

Aspirations, Intentions, and Interests Regarding Post High School Education.

32. About 60 per cent of high school graduates over the last five years were reported by school principals to have continued their education; however, of graduates responding to the study 77 per cent reported having attended a college or university, a business college, or a trade or technical school. Of all high school seniors, 77 per cent indicated future plans would definitely or probably include college attendance.

33. Of senior boys and girls with definite plans for college, 90 and 81 per cents respectively expect to enroll the year following graduation, but of all seniors whose future plans will definitely or "probably" include continuing their education, 64 per cent plan to enroll during the year after graduation.

34. Sixty per cent of the 3,404 seniors responding indicated future plans would definitely include college attendance, and an additional 17 per cent felt plans would "probably" include college.

35. Seventy-six per cent of parents responding indicated their child would definitely (47 per cent) or probably (29 per cent) attend college. (This compares to 77 per cent of seniors who indicated future plans definitely or probably included college.)

36. A fifth of the parents reported they were planning on their child completing high school; 9 per cent indicated a trade or vocational school; 61 per cent planned on a four year college; 35 per cent planned for their child to complete a two-year junior college.

37. Seven of every ten graduates responding indicated interest in opportunities for further education and training. This was the case for 81 and 51 per cents respectively of men and women with no type of post-high school education. Present interest was also expressed in courses for job improvement by 29 and 31 per cents of fathers and mothers respectively of fifth grade children. Interest in courses for self improvement purposes was expressed by 31 and 15 per cents respectively of fathers and mothers of fifth grade children.

38. Of the graduates living in Pima County, 74 and 60 per cents respectively of men and women expressed interest in further education.

39. Of all parents responding, 23 per cent said that if there was a junior college in Pima County, they would be very certain their child would attend, and another 34 per cent thought their child "probably" would.

40. Of graduates who did not attend any kind of school after graduation, 18 per cent indicated they would have been most interested in a community college, while 9 and 34 per cents respectively of these men and women would have been most interested in a trade or technical school.

41. A fourth of the graduates indicated that if two years of college or semi-professional vocational training had been available in the region when they graduated from high school, they definitely would have taken advantage of it, while 22 and 18 per cents of men and women respectively "might" have taken advantage of it. Of graduates who received no type of further education, 64 and 34 per cents of men and women respectively said they would have taken advantage of local opportunity, while another 9 and 20 per cents "might" have done so.

42. A relatively large percentage of graduates presently living in Pima County express present interest in further study of the types which community colleges can and do offer, thus identifying the presence of an educational backlog in the area.

43. Of graduates who had attended a college or university, 38 and 32 per cents respectively of men and women indicated they definitely or might have taken advantage of local opportunity had it been available at the time of graduation. While 28 and 20 per cents respectively of men and women currently enrolled in school as full-time students might be expected to have taken advantage of local opportunities for two years of college or some type of technical or semi-professional training, 58 and 35 per cents of men and women enrolled as part-time students might have done so.

44. Three-fourths of the men graduates and 59 per cent of the women graduates who had taken vocational studies while in high school said they might or would definitely have taken opportunity of a local institution offering two years of college or semi-professional vocational training, as did 69 per cent of those who had taken business courses.

45. About 57 per cent of parents indicated that they would be interested in having their child prepare for a skilled trade. Higher per cents of parents with less education than those with more education were interested in their child preparing for a skilled trade. Forty-three per cent of parents who felt their child should prepare for a skilled trade indicated junior college as the level of education planned for the child to complete. Only two per cent of parents indicated interest in having their child enter a profession.

46. A third of the graduates with no plans for college expressed interest in on-the-job training with a firm, 17 per cent would like to apprentice for a trade, and 18 per cent were interested in military service training. About a fourth of seniors with no plans for college would not be interested in any type of further education.

47. Sixty per cent of all graduates felt that the availability of opportunity for education beyond the high school for Pima County youth was either only "fair" or "poor." Of graduates who had attended a college or university, a slightly higher percentage felt the availability of opportunity was adequate than did those who had had no further education. These perceptions varied

with the high schools the graduates had attended, with appraisals of fair or poor ranging from 54 per cent in one school to 84 per cent in another.

48. Seventy per cent of the employers responding indicated that existing educational facilities were either "fair" or "poor" in meeting the needs of employees. (Reference was to availability of appropriate programs rather than to quality of existing programs.)

Factors Related to Post High School Attendance.

49. The most important reasons why graduates were not presently attending school were "financial" and "family responsibilities." Forty-five per cent of the men with no education beyond high school said that they were not currently in school because of financial reasons, as did 12 per cent of the women with no further education.

50. Nearly four of every ten seniors with no plans for college attendance cited the desire to work and make money as the most important reason, or that it was too expensive and they could not afford it. Some of the 15 per cent of seniors in the top third by class rank who had no plans for college were in this group.

51. About one fourth of the seniors with no plans for college attendance indicated plans would definitely change if more money was available, and another 29 per cent thought plans "might" change. (This group constitutes 13 per cent of all seniors.) About half felt they would need enough money to pay all expenses, 46 per cent would need half their expenses, and 6 per cent would need less than half.

52. Of those graduates who did not attend school following graduation, 73 per cent of the men and 42 per cent of the women indicated they definitely would have continued school provided more financial assistance had been available at the time of graduation.

53. Parental attitude as perceived by graduates was found to relate to whether they had attended school after graduation. Among the men who had no further training, although 18 per cent perceived negative or indifferent attitudes, 36 per cent felt that their parents had wanted them to go but couldn't afford it.

54. Perceived family economic status, stability of home life, perceived parents' attitudes about going to college,

level of parents' educational attainment as reported by seniors, and extent to which relatives other than parents had attended college were all found to be directly and positively related to whether seniors' future plans included college attendance.

55. A positive relationship was found between level of parents' education and level planned for their child. As level of parents' education rises, the per cent expressing interest in their child completing a junior college or a trade or vocational school declines. The higher the educational level of parents, the more certain they were that their child would attend college.

56. Twenty-two per cent of all parents reported no plan at present for financing their child's college education, 22 per cent reported a definite educational savings plan, and 38 per cent indicated they would help the child work his way through. The existence of a plan was associated with higher levels of parents' education.

General Information from Employers.

57. An interpretation of the general classification of the Tucson labor force indicates that approximately 65 per cent of the labor force fall into classifications that indicate they could benefit from training beyond high school but do not require a college degree.

58. An estimate of the Arizona State Employment Service indicates that occupational groups in these classifications studied will nearly double in the next ten years, which will be approximately twice the growth expected nationally.

59. In every classification except one (machine design), employers expect to be seeking increased numbers of semi-skilled or technically trained employees during the next few years.

60. The opinions given by employers indicate that Pima County today represents an unsaturated labor market in the occupations studied. They also foresee a steadily increasing demand for skilled labor during the years ahead.

61. The greatest need for employees in the next few years will be in business, government, in the science related technological fields, and in the health sciences.

62. Many employers provide opportunities for additional training in their organization. Many of these believe that additional two-year college programs could supplement theirs, and some even believe that these new programs could replace theirs.

63. The anticipated increase in personnel in specific areas, in general, covers the same areas that are now in scarce supply, thus indicating some urgency in meeting these needs by developing the appropriate junior college programs.

Evaluations of Guidance Services and School Effectiveness.

64. Sixty per cent of all seniors felt that their high school had given them little or no help, or some but not very much help, in deciding upon what occupation they should enter or in formulating educational plans; 77 per cent felt the high school had given them less than what they need in terms of preparing them for what they planned to do after graduation. The majority of all seniors evaluated the presence of someone in school they could confide in about personal problems as "poor."

65. About two-thirds of all graduates responding judged high school counseling services as "fair" or "poor," and the largest percentage of both men and women judged as "poor" the provision of someone in whom they could confide about personal problems, although this judgment varied from 58 per cent in one school to 16 per cent in another.

66. Of the graduates responding who had attended college, almost one-third and one-fourth respectively of the men and women felt that their preparation for college was "inadequate" or "fair," while 36 per cent of the men and 22 per cent of the women with no further education indicated the same about its adequacy as preparation for employment. Responses varied according to the school attended. Ratings of "excellent" in the matter of preparation for college ranged from none in one school to 26 per cent in another, and in regard to preparation for employment, the range was from 13 to 33 per cent.

67. Evaluations of most selected school services and facilities studied are related positively to the evaluations of general school effectiveness; the strongest relationship is between general school effectiveness

in preparing for a job or further schooling and counseling services and provisions of someone in whom confidence can be placed about personal problems.

68. Evidence suggests the desirability of high schools studying the effectiveness of counseling and guidance programs, with a view to improvement. Strong, effective secondary school guidance and counseling programs are a necessary ingredient in the development of the best community college service.

69. Only slightly more than half the graduates with no further education or training beyond high school had decided upon the type of work they wanted to be doing ten years from now, compared to almost three-fourths of those having attended a college or university. Forty-three per cent of all respondents felt they had received little or no help from their high schools in making decisions about future goals.

70. Considerable variation existed among the schools in terms of evaluations which seniors and graduates gave of the matters discussed. Clues indicated some high schools might profitably study the effectiveness of their guidance services.

Program Needs For Post High School Education.

71. Long range occupational interests and fields of interest for advanced study expressed by seniors, interests of parents in types of educational programs they would have their child study, expressed needs by industry, business, and governmental officials, and types of studies for further education in which interest was expressed by graduates indicate needs for the following post high school educational programs: (1) Business education with emphasis upon business management, secretarial science, and accounting, (2) Nursing, (3) Medical and dental technologies, (4) Electronic (and electrical) technology, (5) Law enforcement, (6) Cosmetology, (7) Mechanical technology, (8) Air conditioning and refrigeration, (9) Drafting, (10) Agriculture related, (11) Art and design technology, (12) Trade training relating to the building industry (possibly apprenticeship training), and (13) Liberal and fine arts and pre-professional education.

72. Recommended courses by employers for job upgrading purposes parallels, for the most part, areas cited as now being in short supply, and growth occupations as well. They also tend to coincide with areas in which

it is recommended two year programs be offered. Courses recommended most are: Air conditioning and refrigeration servicing, blueprint reading, elementary drafting, automotive service repair, basic mathematics, applied business mathematics, electrical fundamentals, electrical equipment maintenance, basic electronics, business management, marketing, salesmanship, retailing, advertising, introduction to business, insurance economics, data processing, statistics, key punch operating, business methods, bookkeeping, accounting, business machines, stenography, typewriting, purchasing, tax accounting, report writing, communications, spelling, speed reading, human relations, food preparation, food selection, supervisory training, laboratory technician, practical nursing, dental technician, medical technician, and X-ray technician.

Site and Housing.

73. A county-wide community junior college should be located so as to best serve the entire county, and its geographical relationship to the concentration of governmental, industrial, and commercial activities is important.

74. Any economies that will not adversely affect the community college's service to the county should be realized in site acquisition and building programs.

75. The minimum sized site should be 120 acres, and all indications point to the desirability of as large a site as possible.

76. Suitable sites with existing useable structures do not exist.

77. Experience in locating junior colleges indicates that in planning facilities to serve a population the size which will exist in Pima County and the Tucson Urban Area in the foreseeable future, it would be superfluous to analyze the presence of educational needs by geographical district or portion of the total area.

78. Since no private sites met the demands of the basic criteria, and because Federal and State lands of sufficient size are obtainable within reasonable distances of the population center, and because these lands may be acquired at nominal initial costs, nine sites of Federal and State land were finally selected. However, the sub-committee indicates that favorable offerings of private land may still be given consideration.

79. Since final site selection is done by the Arizona State Board for Junior Colleges, the sub-committee makes no recommendations, but present descriptions of nine sites for consideration by the Board.

80. Although it is of paramount importance to decide the one site that will best serve the initial years of the junior college, the committee recommends the selection and acquisition of three, and if possible, four sites, to provide for projected growth of the college. Studies of the Tucson Urban Area indicate that these sites should be located to the west, the northwest, and the southeast. The additional locations should be acquired while they are still available from the State and Federal Governments at minimal costs.

81. Based on projected enrollments for the initial years and experience at Arizona Western College, the physical plant should range from 210,000 square feet to 250,000 square feet. At the estimated 1968 cost of $22.00 per square foot, this means $4,600,000 to $5,500,000 for building construction costs. Additional funds for site improvements, equipment, and other necessary costs indicate a range in the total budget of from $5,800,000 to $7,500,000.

82. It may be feasible to consider providing the necessary buildings in two or three phases by initially erecting only facilities of prime importance and by employing multiple use of spaces.

83. A further means of reducing the initial expenditures would be to seek Federal monies for certain health facilities and for construction of an auditorium, and as the need develops in the future, for housing students from the more distant areas of Pima County.

Legal Provisions, Enrollment Projections, and Finances.

84. Legal provisions exist for the establishment of a community junior college in Pima County with the district boundaries coterminous with those of the county.

85. Primary sources of revenue for operation are presently grants of money from the State of Arizona and local tax levies.

86. It seems reasonable to expect more than 3,000 students in a Pima County Junior College by 1970, and in excess of 5,000 students by 1975.

87. Capital outlay, based on annual equal amortization of principal and interest over twenty years may reasonably be expected to be paid entirely from annual grants of money from the State of Arizona in accordance with present statutes.

88. Based on assumptions of increased annual per capita costs of operation, estimated grants from the State for operating funds and legal authorization to levy local taxes for operation, the local levy requirements might be expected to range from .0836 per $100.00 assessed valuation in 1969 to .8254 per $100.00 assessed valuation in 1980 if enrollments develop in accordance with expectations.

89. In recent years the growth of enrollment in junior colleges in the state has exceeded that of the rapidly growing universities. Pima County pays more out-of-state tuition to existing community colleges than any other county. It is anticipated that in 1966-1967, Pima County will send to these institutions more than four times as many students as in 1962-1963, and that the tuition cost to the county for that school year will be $236,930.

Recommendation. Based upon the documented evidence of need for post high school educational programs, the prospective enrollments anticipated, the evidence of community interest and willingness to support post high school education, the existence of adequate size available site location possibilities, and adequate financial resources, it is recommended that further legal steps be taken to establish a public community junior college in Pima County.

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APPENDICES

APPENDIX I

Included in Appendix I are Tables A through F which are relevant to the growth and development of Pima County. They contain statistics on the labor force; enrollment in courses offered in recent years in Tucson's Adult Evening School and the American Institute of Banking; fields of special interest and employment desired by graduates and undergraduates of the University of Arizona; and an analysis of the enrollments forecast for Pima County high schools.

TABLE A

LABOR FORCE DATA FOR PIMA COUNTY
JANUARY-DECEMBER, 1965
IN THOUSANDS[1]

		Employment				Unemployment	
			Non-Agricultural				
Month	Total Civilian Labor Force	Agri-cultural	Wage and Salary[2]	Others[3]	Total Employed	In Thou-sands	Per Cent of Labor Force
Jan.	96.5	1.7	75.6	12.5	89.8	6.7	6.9
Feb.	96.6	1.5	75.8	12.5	89.8	6.7	7.0
Mar.	97.1	1.6	76.3	12.6	90.5	6.6	6.8
Apr.	96.6	1.6	76.3	12.6	90.5	6.1	6.3
May	96.6	1.8	76.5	12.6	90.9	5.7	5.9
June	98.3	1.8	76.9	12.6	91.3	6.5	6.6
July	94.3	1.7	71.8	12.2	85.7	6.6	7.0
Aug.	92.4	1.7	72.1	12.2	86.0	6.4	6.9
Sept.	96.0	1.6	76.3	12.6	90.5	5.3	5.5
Oct.	97.1	1.8	76.5	12.6	90.9	5.4	5.6
Nov.	97.5	1.8	78.1	12.7	92.6	4.9	5.0
Dec.	98.3	1.7	79.3	12.8	93.8	4.5	4.6
Average	96.5	1.7	76.0	12.5	90.2	6.0	6.2

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[1] No persons were involved in labor-management disputes during this period.

[2] Includes all full and part time wage and salary workers who worked or received pay during the pay period ending nearest the 15th of the month. The industrial composition of wage and salary employment appears in "Arizona's Current Employment Developments".

[3] Includes self-employed, unpaid family workers, and domestics.

TABLE B

ENROLLMENT IN ADULT EVENING SCHOOL
TUCSON, ARIZONA, 1950 - 1965

Vocational and Apprenticeship Classes	1950 -51	1954 -55	1956 -57	1958 -59	1960 -61	1962 -63	1964 -65
Airframe, Powerplant, Refresher	54	27	55	33	37	25	49
Aviation Ground School	14						
Architectural & Trade Drafting	48	35	22	10	32	29	30
Auto Mechanics	39	29	22	32	31	32	45
Auto Tune-up		33	25	31	32	36	41
Auto Tune-up (Advanced)							14
Blueprint Reading		37	16	24			
Bricklaying Apprentices	26	18	34	38	39	24	24
City Code					10		
City Arch. Engineering					10		
Commercial Art				28	18		
Computer Programming							48
Carpentry Apprentices	42	92	106	185	160	126	96
Carpentry Journeymen					34		
Criminology		20					
Electrical Estimating (Journeymen)		20					
Electrician Journeymen (NECA)				12	293		
Electricity Apprentices	46	96	69	124	70	80	72
Electronics	88	172	287	165	98	229	42
Fire Training					40		
Floor Coverers Apprentices						8	
Free Hand Drawing			33				
Glaziers Apprentices				17	8		
Hydronics, Plumbing Journeymen							11
I.B.M. Machines		121	69	146	100	85	59
Ironworkers Apprentices						29	12
Isometric & Code, Electrician Journeymen				19			
Jet Powerplant Overhaul		42					

TABLE B (CONTINUED)

ENROLLMENT IN ADULT EVENING SCHOOL
TUCSON, ARIZONA 1950 - 1965

Vocational and Apprenticeship Classes	1950 -51	1954 -55	1956 -57	1958 -59	1960 -61	1962 -63	1964 -65
Job Instructor Training		13					
Machine Shop	79	51	52	43	12	29	25
Machinists (Hughes Plant)				49	42		
Management Systems		43	10				
Mechanical Drawing			22	17	14	29	11
Mill & Cabinet Apprentices		11			6		
Mechanical Inspection		12	13				
Motorcycle Mechanics				12			
Nursing, Practical			16	60	29	22	
Operating Engineers, Apprent.						60	
Painting Apprentices		32	34	36	40	37	26
Parliamentary Law		20					
Photography	34	28	42	35	31	26	31
Photography, Movie			21	23			11
Photo Composition (Newspapers)			25				
Pipefitting Apprentices				19	21	28	25
Plumbing Apprentices	29	51	54	52	113	64	47
Power Sewing				45			
Printing			15				
Production Methods		34	32	10			
Radio & TV Maintenance	59						
Refrigeration	24		37	47		62	74
Sheet Metal	73	29	45	43	41	50	24
Statistical Quality		13					
TV Maintenance							13
Tile Laying Apprentices			18				
Tool & Die (Hughes Plant)		52	10				
Trade Math		10	45	35	172	82	53
Transistors						34	
Upholstery					15	28	
Welding (Arc & Acetylene)	130	77	63	49	88	114	72
Welding (Heliarc for Plumbers only)					16	11	
Total Vocational and Apprentice Classes	785	1218	1292	1439	1652	1379	955

TABLE B (CONTINUED)

ENROLLMENT IN ADULT EVENING SCHOOL
TUCSON, ARIZONA, 1950 - 1965

Commercial and General Improvement Classes	1950 -51	1954 -55	1956 -57	1958 -59	1960 -61	1962 -63	1964 -65
Algebra		15	80	55	68	65	59
Auto Know How						24	
Banking Machines	20	20	40				
Business Machines		21	39	36	39	40	49
Ceramics	23						
Creative Writing				48	39	36	13
Driver Training					238	121	122
English Refresher				47	49	63	69
English for Foreign Born	154	189	422	253	338	460	553
Income Tax							20
Investment Fundamentals							55
Leathercraft	56	22					
Lip Reading		18	18	18	18	9	
Medical Transcription							25
Millinery	90						
Oil Painting	57	136	92	94	143	95	88
Parents Education		9					
Plane Geometry			56	49	18	41	14
Sewing for Homemakers	31	47	45	49	49	113	132
Script Shorthand							59
Shorthand I, Gregg	51	83	60	56	79	127	153
Shorthand Review, Gregg	20	52	41	41	45	58	52
Spanish	148	184	180	176	326	333	316
Trigonometry			17				
Typing	96	138	167	135	166	184	240
Water Color		23	39				
Woodworking	86	29	45				
Total Commercial and General Improvement Classes	831	986	1341	1057	1615	1766	2019

TABLE B (CONTINUED)

ENROLLMENT IN ADULT EVENING SCHOOL
TUCSON, ARIZONA, 1950 - 1965

Distributive Education Classes	1950 -51	1954 -55	1956 -57	1958 -59	1960 -61	1962 -63	1964 -65
Bookkeeping	26	39	39	31	40	37	36
Christmas Sales	14		50	46		51	49
Credit Union Management							32
Gift Wrapping		17					
Grocery Training	191	141	156	146	125	127	131
Layout & Design, Advertising	11						
Managers & Buyers					25		
Merchandise Control			16				
On-the-job Training, Levy's					109		
Public Speaking	44	34	8				
Retail Sales				35	142	15	37
Salesmanship			43				
Selling, Automobiles		30					
Supervisory Relations						20	126
Tourists Information					34		
Total Distributive Education Classes	286	261	312	258	475	250	443
TOTALS							
Vocational and Apprentice Classes	785	1218	1292	1439	1652	1379	955
Commercial and General Improvement Classes	831	986	1341	1057	1615	1766	2019
Distributive Education Classes	286	261	312	258	475	250	443
Adult Evening School Total Enrollment	1902	2465	2945	2754	3742	3395	3417

TABLE C

ENROLLMENT IN THE AMERICAN INSTITUTE OF BANKING
TUCSON, ARIZONA, 1959 - 1966

Professional and Administrative Courses	1959 -60	1960 -61	1961 -62	1962 -63	1963 -64	1964 -65	1965 -66
Bank Teller			31	32	10	10	
Principles of Banking Operations	3	3	110	82	92	58	99
Effective English	1	1	21	21	20	11	16
Commercial Law	2	2		46	33	25	20
Negotiable Instruments		1	22	28	24	10	
Economics	1		31	13		9	
Principles of Bank Data Processing							31
Business Administration			16		11		
Money and Banking	1			13	14		
Accounting I		1	11		36	11	17
Accounting II					8		
Effective Bank Letters		2		12		13	
Effective Speaking		2			17	8	9
Analytical Financial Statements	2		18			21	22
Home Mortgage Lending					23		13
Installment Credit	1		21	29	32	20	28
Supervisory & Personnel Administrative				21		13	
Bank Management	1		10				
Public Relations				11			18
Trust I		2			11	8	
Trust II			10				
Credit Adm. & Bank Invest.		1			10		
Fin. Bus. Enterprises							10
Conversational Spanish				52		11	
Total Professional and Administrative Courses	12	15	301	360	341	228	283

TABLE D

SELECTED MAJOR FIELDS OF UNIVERSITY OF ARIZONA 1965 GRADUATES

Major Field	Bachelors	Masters	Doctors
Accounting	59	15	-
Aerospace Engineering	26	14	2
Anthropology	19	4	8
Business Administration	-	34	-
Business Economics	17	-	-
Chemical Engineering	11	5	-
Chemistry	29	13	7
Civil Engineering	28	13	2
Economics	17	2	-
Education	274	191	11
Electrical Engineering	53	20	2
Engineering Mechanics	-	3	1
Finance	44	1	-
Geological Engineering	2	2	-
Geology	7	20	7
Insurance	6	-	-
Law	76	-	-
Management	67	-	-
Marketing	58	2	-
Mathematics	37	26	7
Mechanical Engineering	47	16	2
Microbiology	18	5	3
Mining Engineering	9	2	-
Nuclear Engineering	-	3	1
Personnel	10	-	-
Physics	6	8	6
Production Management	32	-	7
Systems Engineering	-	4	-
Zoology	43	15	5

Source: University of Arizona

TABLE E

UNIVERSITY OF ARIZONA GRADUATE SCHOOL STUDENTS IN SELECTED TECHNICAL FIELDS SEEKING PERMANENT BUSINESS EMPLOYMENT*

Technical Field	Masters	Doctors
Aerospace Engineering	-	1
Chemical Engineering	7	1
Chemistry	3	6
Civil Engineering	-	3
Electrical Engineering	9	-
Engineering Mechanics	2	-
Engineering Physics	1	-
Geological Engineering	3	-
Geology	3	1
Mathematics	7	3
Mechanical Engineering	6	1
Nuclear Engineering	2	2
Physics	2	1
Systems Engineering	3	-

*Includes all students registered with the University of Arizona Placement Office who will receive their degrees before September, 1965.

TABLE F

ANALYSIS OF DISTRIBUTION OF ENROLLMENT FORECASTS OF PIMA COUNTY HIGH SCHOOLS TO 1980

Year and District	Grade 9	Grade 10	Grade 11	Grade 12	Total 9-12
1966-67					
District #1	4,325	4,225	3,800	3,400	15,750
District #6	98	94	77	70	339
District #8	389	260	213	183	1,045
District #10	501	477	488	426	1,892
District #12	445	400	370	285	1,500
District #15	60	128	161	96	572
Catholic Schools	445	363	357	335	1,500
Other	60	55	51	45	211
County Total	6,450	6,002	5,517	4,840	22,837
1969-70					
District #1	4,800	4,850	4,600	3,850	18,100
District #6	88	75	68	62	293
District #8	336	308	288	267	1,199
District #10	478	475	410	435	1,798
District #12	485	455	415	345	1,700
District #15	178	147	117	121	563
Catholic Schools	477	410	412	375	1,674
Other	63	64	58	50	235
County Total	6,905	6,754	6,368	5,505	25,562
1974-75					
District #1	6,100	5,910	4,900	4,475	21,385
District #6	95	59	55	57	266
District #8	471	475	446	359	1,751
District #10	549	480	430	415	1,874
District #12	643	582	539	436	2,200
District #15	210	154	145	95	604
Catholic Schools	605	497	456	437	1,995
Other	80	76	65	58	279
County Total	8,753	8,233	7,036	6,332	30,354
1979-80					
District #1	6,650	6,400	5,750	5,130	29,930
District #6	86	70	61	57	274
District #8	615	630	608	540	2,393
District #10	601	585	530	510	2,226
District #12	754	709	664	528	2,655
District #15	200	169	124	80	573
Catholic Schools	667	556	541	510	2,274
Other	89	85	77	68	319
County Total	9,662	9,204	8,355	7,423	34,644

APPENDIX II

Included in Appendix II are the names of Pima County industries, businesses, and governmental agencies that responded to the sub-committee's request for information.

Ace Cooler Maintenance

Air Technician Detachment,
162 Fighter Group AD

Allstate Insurance

American Telephone & Telegraph

Amphitheater Public Schools

Anachrome (Anadite)

Anacona

Arizona Bank, The

Arizona Book Store

Arizona Childrens' Home

Arizona Gear

Arizona Glass and Mirror

Arizona Ice and Cold Storage

Arizona Land Title & Trust

Arizona Linen Supply

Arizona Maintenance

Arizona Milling

Ashton Company, The

Associates of Laboratory Medicine

AURA (Assoc. of Universities for
Research in Astronomy)

Avis Rent-A-Car of Arizona

AMECO Supply Co.

B W Construction

Bank of Tucson

Baum and Adamson

Bayless, A.J. Markets

Beaudry Motor Company

Bell Aerosystems

Bernat Enterprises

Big A

Blake, Moffitt & Towne

Boyle, Bilby, Thompson & Shoenhair

Breck, Bill - Dodge

Browse Around Shop

Brunswick Drug Company

Burr-Brown

Burry Biscuit West

Carlson Brick Builders

Catalina Savings & Loan

Catalina Theater

Cella and Barr

Chapman-Dyer

Chevron Asphalt

City Meat

City Van & Storage

Coca Cola Bottling Co.

Coffee Dan's

College Shop (El Con)

College Shop (Park Ave.)

Color Classics Laboratory

Committee on Economic Opportunity

Comptroller-Treasurer
University of Arizona

Cox Bakery

Cox, W. C. & Co.

Craycroft Nursing Center

Culligan Soft Water
Daily, P. L., Roofing
Davis-Monthan Air Force Base
Debby Manufacturing Co.
Devon Gables Nursing Center
Dog House, The
Doit Yourself Stores
Don's Auto Park
Double L Drive Inn
Dunlaps
Edel, Bill - Motors
El Grande Markets #1, #2, #3, #4
El Rancho Markets
El Rio Operating Company
Empire Machinery
Equitable Life Assurance Soc.
Erly-Fat Livestock Feed
Erv's Rentals
Ewing Mattress
Fenster Ranch School
Firestone Stores
First National Bank
Flamingo Hotel
Flowing Wells Public Schools
Frangene's Nursing Home
Friedman & Jobusch Architects
Fritschy's House & Window Cleaners
Garbage Service of Tucson
Gaver, Cecil - Home Appliances
General Adjustment Co.
Ghost Ranch Lodge & Restaurant
Glacier Park, Inc.
Glover Cleaners
Goodbody & Company
Gorman's
Grabe Electric
Greyhound Lines
Hamilton Aircraft Company
Handmaker's Rest Home
Haskell Linen
Hawley & Hawley
Hayden Flour Mills
Hertz Rent-A-Car
Holiday Inn & Dining Room
Home Gas & Appliance
Hope's Beauty Salon
Hughes Aircraft
Humble Oil Company
Industrial Tool & Supply
Institute of Atmospheric Physics, University of Arizona
Jacome's Department Store
Johnson, Darrow, D'Antonio, Hayes & Morales
KCEE
KTKT
KTUC-KFMM
KVOA-TV
Kaibab Buckskin

Kalil Bottling

Korby's Department Store

Kossack, S. J. & Assoc.

Kresge, S. S. (El Con)

Kresge, S. S. (Oxford Plaza)

Kuhn Insurance Company

Lee Supply Company

Levitz, Sam - Furniture

Levy Bros. Clothing Store

Lucky Wishbone #2 - Swan

Lucky Wishbone #4 - Wilmot

McLellan Store (El Rancho)

Medical College, Univ. of Ariz.

Merrill, Lynch, Pierce, Fenner & Smith

Metropolitan Life Insurance

Mickey's Restaurant

Midway Lumber Company

Mills-Touche

Miracle Mile Bottling

Montgomery Ward & Company

Mountain States Telephone Co.

Mulcahy Lumber Company

Myerson's White House and Wilmot Plaza

Old Pueblo Transit

Oliver's Laundry

O'Rielly Motor Company

Ownbey-Smithe Insurance

Panda Steak House

Paul Jones Insurance Co.

Penney, J. C.

Physical Plant, Univ. of Ariz.

Pima County

Pima Mining Company

Pima Savings & Loan

Pima Steel Builders

Pioneer Paint

Place and Place Architects

Placement Service, Univ. of Ariz.

Precision Motors and Rowe-Rowenstein

Prudential Life Insurance

RCA Communications

Raby, W. L. & Company

Ramada Inn

Ram's Market

Redwood Gay Nineties & Silver Room

Retail Credit Company

Richie's Drive In on 22nd

Robbins Investment Company

Roberts Cafeteria

Robertson, Childers, Drachman & Burke

Roh Radio

Rollings Motor

Roman Metal Products

Romanoski Glass

Royal Crown Bottling Co.

Sandy's Drive Inn

Santa Rita Hotel & Dining Room
Santa Rosa Nursing Home
Save-Co.
Scholer & Fuller, Architects
Selby Motors
Sevits, Wally - Refrigeration
Sky Chef (La Granada)
Skyline Realty & Development
Solot Realty
Southern Arizona Bank & Trust
Southlawn Memorial Park
Standard Oil of California
Student Union, Univ. of Ariz.
Sundt Construction Company
Sunnyside Public Schools
Superior Tire Company
Supplies for Industries
Swift & Company
Swiss Quality Products
Switzer's Fashions
Texaco, Inc.
Thomas-Davis Clinic
Thunderbird Pools
Trico Electric
Tucson Airport Authority
Tucson Blueprint
Tucson Clinic
Tucson, City of
Tucson Desert Inn
Tucson Electric Supply
Tucson Federal Savings & Loan
Tucson Fertilizer (Triple A)
Tucson Gas & Electric
Tucson Inn Motor Hotel
Tucson Letter Shop
Tucson Medical Center
Tucson National Golf Club
Tucson Newspapers, Inc.
Tucson Office Supply
Tucson Prime Meats
Tucson School District #1
Tucson Teachers' Credit Union
Tucson Title Insurance Company
Tucson Travelodge
Upham Nurseries
U. S. Post Office
Valley House Convalescent Center
Valley National Bank
Victor Arida & Company
Walker, Ted - Trailer Sales
Washington National Insurance
West-Cap Arizona
Western Auto Supply
Western Draperies
Western Union Telegraph
Williams, R. L. Ltd.

APPENDIX III

Included in Appendix III are the plan of organization of the Pima County Junior College Planning and Development Committee, and the timetable of the steps it has taken and projected.

PLAN OF ORGANIZATION

PIMA COUNTY JUNIOR COLLEGE PLANNING AND DEVELOPMENT COMMITTEE

1. Overall Committee Composition and Structure
   A. Overall Committee Composition
      1. Tucson Youth Board
      2. Chamber of Commerce
      3. Tucson Community Council
      4. City of Tucson - City Council
      5. Pima County Board of Supervisors
      6. University of Arizona
      7. County School Superintendent
      8. Tucson League for Public Schools
      9. Pima County Education Council
      10. Tucson Board of Realtors
      11. Pima County Medical Society
      12. Sahuarita School Board
      13. Marana School Board
      14. Arizona Congress of Parents & Teachers
      15. Industrial Development Committee
      16. Pima County Junior Chamber of Commerce
      17. Legislative Representatives - 4 from House
          2 from Senate
      18. School Districts in Tucson (either school board member or professional)
      19. Arizona State Employment Service
      20. Central Trades Council
      21. Pima County Bar Association
      22. Pima County Dental Association
      23. Pima County Osteopathic Association
      24. Southern Arizona Chapter of Certified Public Accountants.
      25. Pima County Nurses Association
      26. Catholic School Board
      27. Catholic Home and School Association

   Each group will designate one representative and one alternate to the overall committee.

II. Committee Duties and Responsibilities
   A. The Committee shall be responsible to plan and direct all activities in connection with proposed study of a Pima County Junior College. These activities shall include but not necessarily be limited to the following duties and responsibilities:
      1. Determination of need for such facility.
      2. Determination of the character and educational purposes of such a school.

3. Determination of size, location, construction costs, and operating costs of such school.
4. Recommend plan of financing construction and operation of such facilities utilizing all available sources of funds.
5. Determine availability of adequate educational and other personnel to operate such a facility.
6. Prepare an overall plan including all of the foregoing data for submission to the participating agencies and the voting public of Pima County.
7. Plan campaign for circulation of the necessary petitions to secure signatures of 10% of the registered voters of Pima County.
8. Work with the proper public officials as required by statute in carrying out the legal steps for the establishment of such a junior college.
9. Develop and execute the necessary public information campaign in connection with the county-wide election required by law.

III. Officers and Sub-Committees

A. Officers

The overall committee will elect from the steering committee a chairman, a vice chairman, and a secretary.

B. Steering Committee

1. A steering committee of eighteen members representing a cross-section of community interest shall be elected by the overall committee and include representatives from the following:
    - Pima County
    - Chamber of Commerce
    - Industry Representative
    - Tucson Youth Board
    - Educational Agencies
    - Tucson Community Council
    - Legislative Representative
    - Central Trades Council
    - Two members at large
    - Five chairmen of study sub-committees
    - Chairman of public information committee
    - Chairman of ways & means committee
    - Chairman of board member screening committee

C. Technical Advisory Committee

The steering committee, with approval of the overall committee, shall appoint such technical, professional, and other personnel to a Technical Advisory Committee to assist in carrying out the planning, research, and developmental activities of the committee.

D. Study Executive Committee

Composed of the study director, field director, chairman of each of the five study sub-committees, and advisory members from the study sub-committees.

E. Study Sub-Committees

1. Community Growth and Development and Objectives of Junior College.
2. Educational Needs of Youth.
3. Requirements of Business, Industry & Government.
4. Site and Housing.
5. Legal and Finance.

F. Public Information Committee

To plan and direct all public information programs in connection with the petition campaign, the campaign for the formation of district election, and the board election.

G. Petition Committee

To plan and execute a campaign to secure the necessary petitions for the formation of a junior college district.

H. Ways & Means Committee

To plan and conduct a campaign to raise necessary funds for public information and campaign purposes.

I. Board Member Screening Committee

To conduct a screening campaign to select qualified candidates for junior college board and make recommendations to County School Superintendent in connection with these first appointments.

IV. Time Table

Oct. 31, 1965	Meeting of representatives of Tucson Youth Board, Chamber of Commerce and Tucson Community Council to discuss information of committee.
Nov. 20, 1965	Enlist assistance of Arizona State Junior College Board.
Nov. 30, 1965	Complete recruitment of committee membership and organize committee, select officers and steering committee.
Dec. 10, 1965	Selection of study director by State Board.
Dec. 15, 1965	Recruitment of Technical Advisory Committee

Jan. 15, 1966 Recruitment of members of the five study sub-committees.
July 15, 1966 Completion and publication of study.
July 15, 1966-Sept. 1, 1966 Submission of report to member organizations and public.
Sept 30, 1966 Circulation of petitions.
Oct. 5, 1966 or earlier. Submission of petitions to County School Superintendent for verification.
Oct. 15, 1966 or earlier. Submission of the petition by County School Superintendent to Arizona State Junior College Board and certification that the district meets minimum assessed valuation and potential full-time student enrollment.
Oct. 17, 1966 Action by State Junior College Board of Directors on the petition.
Oct. 20, 1966 Return of petition to County School Superintendent who notifies the Board of Supervisors to put issue of formation of junior college district on the November 7th, 1966 general election ballot.
Nov. 7, 1966 Election to form district.
Nov. 15, 1966 If election is successful, County School Superintendent appoints the first county junior college board.
Dec. 1, 1966 County Superintendent convenes board for purposes of organizing same by electing president and secretary.
Jan. 15, 1967 State Junior College Board presents a plan to the legislature for formation and establishment of junior college district.
Feb. 15, 1967 Legislature acts on plan and if it approves, appropriates its share on construction capital outlay.
May 15, 1967 Pima County Junior College Board conducts a bond election for authority to issue bonds for balance of construction cost.
May 15, 1967-Sept., 1968 Pima County Junior College Board completes planning and construction stages of proposed junior college.
Sept. 1968 Pima County Junior College opens its doors.